The Magazine For ALL Commodore Computer Users

TPUG Magazine

$2.95

May 1985

TPUG Past, Present and Future

by Michael Bonnycastle, Louise Redgers and Gerry Gold

Fake Flight Sims Grounded by Ken Cox

Butterfield: In Praise Of VIC 20

Canada Post Postage paid
Postes Canada Port payé
Bulk third class
En nombre troisième classe
E12430
Scarborough

0 56698 72145 05

HOT SOFTWARE FROM

ACTIVISION

ROCK N' BOLT

A high-steppin' high energy test of wits and rhythm.
100 floors of fun!
It's high-steppin', hot music on the highrise!

$39.95

MASTER OF THE LAMPS

A masterpiece of action and adventure. Can you meet the challenge?

$39.95

THE MUSIC STUDIO

Own your own music studio. The most complete, easy-to-use music program on the market. Create, compose, edit, engineer – all on your Commodore 64.

$39.95

The latest from . . .

ELECTRONIC ARTS

Adventure Construction Set

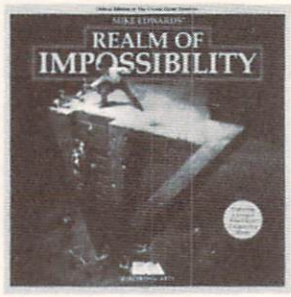
"The Ultimate Adventure Game". There are 8 adventures built-in.

$69.95

Racing Destruction Set

A split screen computer slot car racing set for 2 players.

$49.95



Realm of Impossibility

A 3-D puzzle game with 129 screens. 4 levels of difficulty.

$49.95

ELECTRONICS 2001 LTD.

Name _____

Address _____

_____

☐ Check or money order enclosed ☐ Visa ☐MasterCharge ☐ American Express

Acct.# _____ Exp. Date _____ Signature _____

ELECTRONICS 2001 LTD.

5529 Yonge Street, Willowdale, Ontario M2N 5S3
Tel: (416) 223-8400

Note: All prices in Canadian Funds. Phone and mail orders welcome.
Ontario residents add 7% sales tax.
Add 5% for shipping (minimum charge $2.00)

THE PRINT SHOP

Now with only a few keystrokes you can write, design and print like a pro. Everything you produce will be as unique and personal as your own signature.

$59.95

BETTERWORKING
from SPINNAKER

SPREADSHEET

SPREADSHEET is the ideal program for planning budgets and preparing financial statements, as well as creating text and organizing information.
It is fast, versatile and powerful enough to handle all your spreadsheet needs.

And it's easy enough to understand and use right away.

SPREADSHEET combines a full-feature spreadsheet with basic word-processing and the sorting and searching capabilities of a database.

$59.95

Butterfield's Machine Language

$17.95

The complete guide to the 1541 operating system.

$27.95

$49.95

PaperClip
(the word processor)

$79.95
with SpellPack $99.95

Consultant
(the database)

$124.95

The ultimate program for learning chess

$69.95

A must book if you own a VIC!

$14.95

Boss Joystick

$23.95

Kraft Joystick

$17.95

COMPUTE!s First Book of Commodore 64 Games

Packed full of games: 'Snake Escape', 'Oil Tycoon', 'Laser Gunner', 'Zuider Zee', and many more. Machine language as well as strategy games. Ideas and techniques for writing games.

$18.95

A User's Guide

$14.95

Grand Master Chess

$24.95

Memorex Disks

(Special) SSDD $27.95/10

BASF

DISKS SSDD $24.90 in hard box

Cassettes

C10 Tapes $1.00 ea.
C20 Tapes $1.25 ea.
Cassette boxes .25 ea.

Ribbons

1525	$12.95
1526	$14.95
4023	$14.95
Spirit 80	$14.95
801	$12.95
802	$14.95
8023	$14.95
4022	$12.95
MX80	9.95
RX80	9.95

CABLES
for disk drive or printer

6ft. replacement cable **$14.95**

6ft. extension cable **$14.95**

NET WORTH C64
(home money management)

$99.95

ELECTRONICS 2001 LTD.

Name _____
Address _____
_____

☐ Check or money order enclosed ☐ Visa ☐ MasterCharge ☐ American Express
Acct.# _____ Exp. Date _____ Signature _____

ELECTRONICS 2001 LTD.

5529 Yonge Street, Willowdale, Ontario M2N 5S3
Tel: (416) 223-8400

Note: All prices in Canadian Funds. Phone and mail orders welcome.
Ontario residents add 7% sales tax.
Add 5% for shipping (minimum charge $2.00)

COMPLETELY MENU DRIVEN . VERY USER FRIENDLY
BETTER INTEGRATION THAN LOTUS 1-2-3 * OR SYMPHONY*
VIRTUAL DISK OPERATION

KING MICROWARE'S FULLY INTEGRATED

RHAPSODY 64

1 DATABASE MANAGER
2 WORD PROCESSING
3 SPELLING CHECKER
4 SPREADSHEET / GRAPHICS

COPYRIGHT 1985 BY BRIAN MORROW

All You'll Ever Need !

Suite 210, 5950 Côte des Neiges
Montréal, Québec H3S 1Z6
Tel.: (514) 737-9335

KING MICROWARE Ltd.

$64.95
DEALER INQUIRIES INVITED

*1-2-3 and Symphony are Trademarks of Lotus Development Corporation

TPUG Magazine

Publisher: Louise Redgers
Editor: Nick Sullivan
Assistant Editor: Marya Miller
Director of Advertising Sales: Louise Redgers
Production Assistant: Astrid Kumas
Art Director: Teresa Coviello
Computer Jockey: Malcolm O'Brien
Cover Photo: Roberto Portolese Studio
Typesetting: Noesis, Toronto, Ontario
Printing: Delta Web Graphics, Scarborough, Ontario

TPUG Magazine is published 10 times a year by Toronto Pet Users' Group (TPUG) Inc., the world's largest Commodore users' group. TPUG is a non-profit corporation dedicated to the service and support of owners and users of Commodore computers.

All rights to material published in TPUG Magazine are reserved by TPUG Inc., and no material may be reprinted without written permission except where specifically stated.

Correspondence: Send change of address and subscription enquiries to: TPUG Inc., Address Changes, 1912A Avenue Road, Suite 1, Toronto ON, Canada M5M 4A1. TPUG Magazine welcomes freelance contributions on all aspects of Commodore computing. Contributions should be sent on disk, though accompanying hardcopy is welcome. Be sure to include return postage if you wish materials returned. Please indicate on the disk label which Commodore disk format and word processing program you have used. Remuneration for articles published is $30.00 per magazine page if the author retains the copyright, and $40.00 per magazine page if the copyright is assigned to TPUG Magazine. All contributions are subject to editing for length and readability. Address editorial contributions to: The Editor, TPUG Magazine, 1912A Avenue Road, Suite 5, Toronto ON, Canada M5M 4A1. Letters to the editor may be sent to the same address. Like other material, letters may be edited for length and readability.

Circulation:
Subscription 16,000 Newsstand 10,000

ISBN #0825-0367

TPUG Magazine is distributed by: Compulit Distributors, PO Box 352, Port Coquitlam BC, Canada V3C 4K6, (604)-464-1221; and Micron Distributing, 409 Queen Street W., Toronto ON, Canada M5V 2A5, (416)-593-9862, Toll Free Order Desk 1-800-268-1238.

VIC 20, Commodore 64 and SuperPET are trademarks of Commodore Electronics Ltd. PET is a registered trademark of Commodore Business Machines, Inc. CBM is a registered trademark of Commodore Electronics Ltd.

Subscriptions to TPUG Magazine may be obtained by joining the Toronto Pet Users' Group (TPUG), Inc. Another benefit of TPUG membership is the right to order inexpensive disks and tapes from the club's extensive software library. Yearly membership fees are:

Regular member (attends meetings)	$35.00 Cdn.
Student (full-time, attends meetings)	$25.00 Cdn.
Associate (Canada)	$25.00 Cdn.
Associate (U.S.)	$25.00 U.S.
	$30.00 Cdn.
Associate (Overseas — sea mail)	$35.00 U.S.
Associate (Overseas — air mail)	$45.00 U.S.

For further membership information please contact:

TPUG Inc., Membership Information
1912A Avenue Road
Suite 1
Toronto ON
Canada M5M 4A1

1552 Hertel Ave.
Suite 144
Buffalo, NY
USA 14216-2882

TPUG Telephone Numbers:
Business Office (416)-782-8900, (416)-782-9252
Magazine Office (416)-782-1861
Advertising (416)-782-1861

DIRECTORY

85 TPUG Magazine MAY

Feature: TPUG: Past, Present and Future

10 A Club For Commodore Users **by Gerry Gold and Louise Redgers**
11 The TPUG Software Library **by Michael Bonnycastle**
12 TPUG Chapter Meetings **by Louise Redgers**

Articles

14 In Praise of VIC 20 **by Jim Butterfield**
15 Machine Language Converter **by David Archibald**
16 A SuperPET Carshow **by Brad Bjorndahl**
18 A Beginner's BBS Guide: Part Two **by Ian A. Wright**
20 File Teleporting **by Phil Kemp**
22 TPUG Conference 1985
24 Fake Flight Sims Grounded **by Ken Cox**
26 The Victim and The Disk **by Malcolm O'Brien**
27 Save-With-Replace: The Real Rumour **by Malcolm O'Brien**

Micro Processes

28 Where Does It All End? **by Paul Blair**
28 C-64 Datacheck **by Chris Johnson**
29 Using Print Using **by Sean Rooney**
29 Custom PET/CBM Start-Up Messages **by Ian A. Wright**
30 Ye Olde Pette 80 — It Already Exists **by John R. Kurczak**
30 Disabling VIC 20 Memory Expansion **by Neil Phillips**
31 A Yen for a Different 64 **by Ken Cox**

Reviews

36 The Second Self **by Mike Levin**
36 Pro-term 64 **by Greg Payne**
37 Ring of Power **by Marya Miller**
37 Quintic Warrior **by Eric Miller**
37 Inside Commodore DOS **by Michael Quigley**
38 New Word Processor 'Worth the Wait' **by Dave Powell**
39 Spelling Checker Not For Everyone **by Dave Powell**
40 Print Shop **by Mike Martin**
41 TPUG Terminal Programs **by Ian A. Wright**

Departments

4 Line Noise **with Lana Coviello**
6 This and That **with Doris Bradley**
8 The Answer Desk **with Malcolm O'Brien**
21 BBS Password for May
32 Additions to the TPUG Software Library
33 TPUG Software Order Form
42 Products Received **with Astrid Kumas**
44 TPUG Associate Clubs
45 Classifieds
46 Calendar of TPUG Events
48 TPUG Magazine Distributors
50 TPUG Contacts
50 Index of Advertisers

LINE NOISE

TPUG Magazine *invites you to express your views on Commodore computing by writing to:*

Line Noise
TPUG Magazine
1912A Avenue Road, Suite 5
Toronto, Ontario M5M 4A1
Canada

Old Listings For New

This is a complaint or suggestion for the magazine. Please go back to the old way of listing the monthly disks. The current listings format doesn't present the true picture of what is on the disk. Ten dollars is not too high for a disk full of programs, but my point is that one of the unmentioned programs may be just the one I want. I quite often buy one of the club disks for just one program, and feel my money is well spent.

Hoping that this suggestion will help.

Mayland Harriman
Port Arthur, Texas

Congratulations on the wild new library listings format. I and all my friends — one of whom is a policeman — agree that it is the best thing that has happened in personal computing since **Pac-man** gobbled his first dot.

Your friend,

Elvin Glubang
Port Arthur, Texas

Air Piracy

I recently returned the warranty registration card accompanying my **Flight Simulator II** to the people at SubLOGIC. Along with the card, I enclosed a letter indicating how pleased I was with this piece of software, but with some reservations.

I let them know that it would have been nice if they had made it MSD drive compatible, and that although I was aware of the problems of software piracy, I would have liked to have been able to make one backup copy.

Well, they were kind enough to write back to me just to let me know that *their* version of **Flight Simulator II** *is* compatible with the MSD disk drives. They also let me know that, judging by the warranty registration card, I had purchased a counterfeit version.

Based upon previous conversations with other TPUG members, I am led to believe that a great many of us have been had.

Tim Nourse
Markham, Ontario

Unfortunately true. See our article by Ken Cox, on page 24 of this issue, for the latest update on this story.

Koala Storage Problem

One of the more important software packages that I run is **Koalapainter** with C-64, KoalaPad and MSD-2 Dual Drive. One of the things I noticed, after I replaced my 1541 drive with the new MSD-2, was that the *storage* option on the main menu for **Koalapainter** would not work with the MSD-2. This, evidently, was because **Koalapainter** was written for the 1541, not the MSD.

I have found a fix for this problem: run **Koalapainter** with the program disk in drive zero and a blank formatted disk in drive one. This seems to trick **Koalapainter** into thinking that it is a single drive, instead of a dual drive.

Sean Rooney
Mississauga, Ontario

Life Saver?

I was pleased to see 'A Life Saver For 1541 Users' in the February issue of *TPUG Magazine*. The opportunity to reduce some of the chatter when loading protected disks was very welcome.

After reading the entire magazine, I entered the 'Life Saver', and then loaded **Easy Script** into my computer. But wait! **Easy Script** would not load. In fact, the alignment was suddenly so far off that no program would load! Needless to say, I was a bit concerned.

Lucky for me, I received the current issue of *The Transactor* shortly after. It contained an article on how to align the 1541. I did so, and am now back in business.

I will not again enter the 'Life Saver' until someone can tell me what I did wrong, or how to prevent a similar problem in the future.

Herbert A. Paul
Washington, Illinois

The routine 'A Life Saver For 1541 Users' by Mike Norman (page 37, February '85 issue) does not seem to work with **Easy Script**. The program loaded to the point where the disk normally does its 'break dancing', locked up, and the disk drive light stayed on. I was lucky enough to be able to extract the disk with no harm. I do not know if the luck would hold with other programs. Therefore, I do not think I will try this routine again until I can get more information.

I would like to have a routine that would work as this one was advertised. I would like to preserve the alignment of my 1541 as long as possible.

By the way, the new *TPUG Magazine* is really great. Keep up the good work.

Robert A. Dueease
Redondo Beach, California

We are sorry that you are having problems with this routine. However, it has appeared in several magazines, and has been extensively tested. It does work with our copy of ***Easy Script****, and with other programs we have tried. It's possible, though, that there are other versions of* ***Easy Script****, with different copy protection.*

If anyone has any more information concerning this problem, we would appreciate hearing from you.

Line Noise *presented by Lana Coviello*

FOURTH ANNUAL CONFERENCE

for members of TPUG

Saturday and Sunday, May 25 and 26, 1985
9:30 a.m. to 4.30 p.m.

252 Bloor St. W. (Bloor & St. George)

FEATURING: Two-day program of speakers covering topics of interest to beginners and experts

Sunday session with Jim Butterfield
Introduction to machine language

Half-day sessions:

Saturday, May 25th
Introduction to C-64 Graphics by John Moore
Very Elementary Programming in BASIC by Lorenzo Pinazza
Introduction to C-64 Sprites by Carl Garant & John Moore

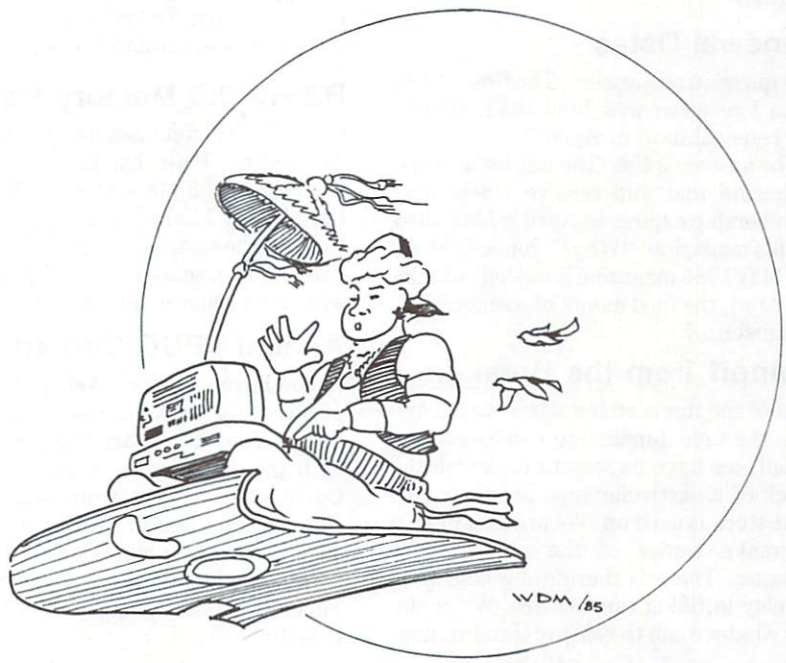
Sunday, May 26th
Commodore Data Bases Versus dBase III by Rob Lockwood

TPUG program library available on pre-copied disks (4040 format $5)
Dealer display area
"Traders' Corner"
"Answer Room"
"Birds of a Feather" session for BBS SYSOPs, newsletter editors, member clubs
Optional **Club Banquet** Saturday evening — $25 per person
Optional two-day Spouses program

REGISTRATION: **At the door: Members $30,**
non-members $55 (includes one-year membership)

FOR FURTHER INFORMATION AND A REGISTRATION FORM CALL THE TPUG OFFICE DURING BUSINESS HOURS

416-782-9252
416-782-8900



This and That

by Doris Bradley

Obviously Introductory

My thanks to Ron Obvious, who did such a sterling job of filling in last month.

The last while has been rather hectic, what with the Commodore Show in San Francisco and Jim Butterfield's trip to Trinidad. The members of TACO went out of their way to make the TPUG contingent welcome. Thanks again, guys — hope to see you another year at Carnival time.

Changes at TPUG

After serving TPUG for several years, first as a volunteer and later as Business Manager, Chris Bennett has decided it's time for a change and has gone on to become a systems analyst for a well-known stock brokerage firm here in Toronto. During his tenure at the club, Chris saw the membership grow first to hundreds and then to 3,000, and ultimately to almost 16,000 members. I have enjoyed working with you, Chris — good luck in your new job!

Chris Bennett's successor, under the title of General Manager, is Louise Redgers. As you are no doubt aware, Louise has been very active in TPUG for some time as coordinator of the Commodore 64 chapter meeting and advertising director for *TPUG Magazine*. I am sure I speak for all the staff when I wish her all the best as she takes on this new position.

Renewal Dates

The question still arises: "The first TPUG issue I received was June 1984. Why is my renewal date in April?"

The answer is this. The last issue of the magazine that you receive when your membership expires in April is May 1985 — this magazine. "Why?" you ask. Well, the May 1985 magazine is mailed out during April, the final month of membership. Make sense?

Spinoff from the Break-In

One of the items stolen a few weeks ago was the tape duplicating machine. As a result, we have no way to replenish the stock of a particular tape once our current stock is used up. We are also unable to make copies of the most recent releases. There is therefore going to be a delay in filling tape orders. We're doing what we can to remedy the situation, and orders will be filled as quickly as possible. Unfortunately, tape duplicating machines are rare and expensive beasts, not easily replaced.

Another casualty was the bulletin board system. If all goes well, it will be up and running by the time you read this, but it all hinges on the speed with which TPUG can settle with the insurance adjuster.

Four-Minute Backup

Again a great big Thank You to all those who have sent in money for transmission to Thomas Tempelman. The response has been proof that the networking of club newsletters and computer magazines really takes place. To date, over 1,000 dollars has been received and forwarded to Thomas. Here are a couple of quotes from accompanying correspondence:

"For the Tempelman fund. May he prevail — there's a little extra there since I shared a copy with a friend who probably shared with a friend, etc."

"After reading Jim Butterfield's article in the November issue of TPUG Magazine, *the members of the Commodore Users of Panama (CUP) took in donations and matched them with funds from our treasury to help reimburse Mr. Tempelman for his outstanding* ***3 Minute Backup*** *program. We can still remember the day when this fine program showed up at one of our club meetings. To say the least, it was the hit of the day. It is truly a most worthwhile program and we hope that this cheque for 100 dollars sends a message to Mr. Tempelman that we here in Panama appreciate his effort."*

BASIC 3.5 Memory Map

Our TPUG ambassador from Down There, Paul Blair, has provided us with the BASIC 3.5 Memory Map. It runs to ten 8 1/2 by 11 sheets of paper. In order to cover the costs involved in copying and mailing, please send two dollars along with your request for the memory map.

Annual TPUG Conference

If you haven't done it yet, get your application for the Conference in the mail today. Your 30 dollars will provide you with the opportunity to listen to many Commodore experts from near and far. You will find sessions for every level of expertise, and for most Commodore computers (including the Commodore 64, SuperPET, Commodore 16, Plus/4 and B-128).

Z-RAM Users

There is a Z-Ram Users Correspondence Group with no membership fee for participation. Members will receive an occasional newsletter. Anyone interested should send name and address to: Richard W. Jones, 1205 Rogers Place, Irving, TX 75060, telephone 214-986-6913, Compuserve ID: 75076,600.

Tape Alignment Kit

We have finally given up on trying to put together this kit. All those who have ordered it in the past are receiving letters and an appropriate settlement will be made in each case. We do have the instruction sheet, which we will be pleased to send anyone interested in how to align his or her Datasette. The sheet, plus a size 0 Phillips screw driver, should do the trick.

MARCA

July 26, 27 and 28 are the dates for the second Commodore Users Computer Fair, which is being held at Valley Forge Convention and Exhibit Centre, King of Prussia, Pennsylvania. There will be many Commodore experts making presentations, as well as a great variety of exhibitors of products of interest to Commodore users. Hope to see you there.

'Liquidware' Continued

Jim wishes to pass on the message that if you wish some testing done, just send along the beer to him c/o the TPUG Office. We'll see that he gets most of the submissions. By the way, have you ever been to Nebraska?

Speaking of Nebraska...

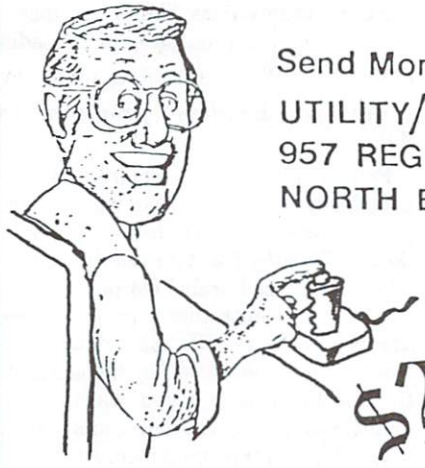
The Midwest Commodore Conference/Expo show will be held on October 12, 1985 at the Industrial Training Center, 27th and Q Streets, in Omaha, Nebraska. Jim Butterfield will be the featured speaker. More details will follow.

This Month's Cover

The 'World of TPUG' graphic on this month's cover was designed by staff artist Terry Hachey. The printer featured is the new Okimate 10 colour graphics printer, from Okidata, which was kindly provided by Computers For Less, of Toronto. Look for a review of this innovative peripheral in a forthcoming issue of *TPUG Magazine*.

Reset 64

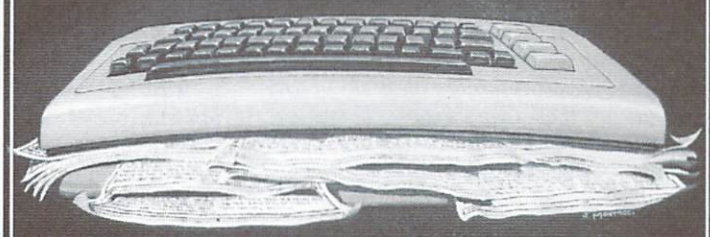
- NOW!!, Use your 'JOYSTICK' to retrieve lost programs.
- "Diode protected" adapter module & reset program included.
- ! UNLOCK — LOCK-UPS!
- 100% VIC/64 COMPATABLE



Send Money Order to
UTILITY/SOFTWARE
957 REGINA ST,
NORTH BAY, ONT.
P1B-2K8

$24.50
ADD $1.50 FOR SHIPPING
*TAX INCL'D

Expand Past Maximum Capacity!



The Transactor

The Tech/News Journal For Commodore Computers

At better book stores everywhere! Or 6 issues delivered to your door for just $15.00 (Overseas $21 U.S. Air Mail $40 U.S.)
The Transactor. 500 Steeles Ave. Milton, Ontario. L9T 3P7.
416 876-4741 From Toronto: 826 1662
Also check out The Transactor Disk and The Complete Commodore Inner Space Anthology - to us, expansion knows no limits!

TORONTO COMPUTES! *A monthly tabloid paper keeping its readers up to date on the local micro scene • Widest circulation of any computer publication in the Toronto area • For all users from the enthusiast to the novice • Topical coverage of recent developments and events.*

LOOK FOR THE

BUYER'S GUIDE

IN AUGUST

Toronto and region's most comprehensive guide to where and what to buy.

If you're in the micro business and we haven't been in touch with you, please give us a call. 694-0303.
3 Massey Square, Suite 201, Toronto M4C 5L5

TO GET A SUBSCRIPTION TO TORONTO COMPUTES!

(until next month)

But our special charter rate of $8 is offered only until the end of May. On June 1 the regular price of $11 per year takes effect. You can also order back issues Nos. 1-4 for $1 each

Please sign me up as a charter subscriber to the biggest, best, most comprehensive consumer-oriented tabloid for microcomputer users in Toronto. I enclose $8.

Name .....

Address .....

City ..... Prov. ..... Postal Code .....

☐ I enclose $1 for each of the following back issues .....

Optional: Toronto Computes! would appreciate answers to the following:
What kind of computer(s) do you own or use? .....
How long have you owned or used it? .....
Do you use it at home or at work? .....

Mail to: Toronto Computes!
3 Massey Square, Suite 201
Toronto, Ontario M4C 5L5

Cheque or money order only, payable to "Context Publishing".

The Answer Desk

with Malcolm O'Brien

Index Search

I would like to obtain indexes of the following magazines: Compute!, Compute!'s Gazette, RUN *and* Midnite. *I was wondering if any of your members might have indexes (preferably on disk) of any or all of those magazines. There are articles in back issues that I sometimes would like to review, but I frequently have trouble finding them.*

Lynn Harner, President
Dodge City Commodore User Group

I know just how you feel, Lynn. I'm up to my ears in computer magazines too, and indexing them is a project that I expect to be working on very soon. As you might expect, though, my top priority will be all the *Torpets* and *TPUG Magazines* published since the group's inception. I'll be indexing the magazines you've named, along with other items of interest to Commodore users, from such other sources as *Micro, Creative Computing* and *Byte*. Watch for news of the TPUG-specific indexes in future issues of *TPUG Magazine*.

Hard Disk Blues

I have been having problems with my 9090 Hard Disk System. I would like to replace it with a compatible non-Commodore drive. Do you have any suggestions?

Alvin Foter
Boston, Massachusetts

We are currently utilizing the B-128 with Precision Software's Superbase *to run our stockroom and purchasing systems. The difficulty lies in that the 8050 floppy disk drive does not have enough capacity to support the system as well as we would like. Commodore's 9060 and 9090 hard disks are no longer in production, and we seem to be in the throes of an insurmountable problem. Consequently, any information or suggestions you could supply regarding an interface or a compatible hard disk drive would be deeply appreciated.*

Rainer M. Cole
Amityville, New York

I have bad news and I have good news, Alvin and Rainer. Jim Butterfield informs me that, although there once was a compatible hard disk for CBMs, it is no longer in production — that's the bad news. The good news is that Jack Tramiel (founder of Commodore and now owner of Atari) says that Atari will soon be making hard drives for a variety of home computers. The best news is that a 15 megabyte hard drive will cost $399.00 (US)! We'll have to wait and see on this one, but there's another possibility, as well.

With the introduction of the C-128 (and the upcoming IBM-compatible), Commodore seems to be going after a share in the business market once more. I have a feeling that Commodore may soon start producing hard drives again. One more thing for Alvin — if you're using a SuperPET, you can use a variety of hard drives by installing the OS/9 operating system. Write to the TPUG office, if you'd like more details on this.

Output Redirection

I notice that the 'change printer default' sub-program included with Paperclip64D now asks if you want printer output to the user port of the C-64. I answered yes to this, with the result that my TP-1 now works with a simple ribbon cable between the C-64 user port and the Centronics parallel socket of the TP-1. In other words, an expensive interface is not required — so long as I am using Paperclip64D. *This suits me admirably, as the MW302 interface that I have been using for the past ten months is in for repair.*

I would like to use the printer in this way with other programs, some commercial, which direct printer output, at present, to the serial port of the C-64. I have tried to find out how to do this in the Programmer's Guide, *but without success. Does anyone have the answer?*

L.F. Jarrett
Carp, Ontario

Thanks for the tip on **Paperclip**. The **Paperclip** manual says that your interface should be set to its transparent mode, since the program talks to your printer directly. Output flexibility is one of **Paperclip**'s strong points, and a tip of *The Answer Desk*'s hat goes out to Steve Douglas and Batteries Included for supporting virtually every printer and plotter known to man!

Redirecting output this way is a tricky business, however. Your TP-1 expects to receive true ASCII, but your programs (except **Paperclip**) are probably sending PET ASCII. Normally, your interface does the translation and your printer never knows the difference. If the software addresses the serial bus directly, you're out of luck. However, if it uses Kernal routines (more likely), you may be able to change the routines before loading your software.

Richard Bradley provided the following:

Printer output can be redirected to the user port in one of two ways; either parallel or RS 232. To do this, you must do a **CTRL SHIFT 2**. You will then be asked: 'Centronics Parallel Output? Y or N'. If you want Centronics Parallel, answer 'Yes': if you want RS 232, answer 'No'. You will then be asked for the baud rate, the parity, whether you want X-Line handshaking and whether you are using a VIC-Modem type interface. Answering all these questions according to your set-up will give you RS 232 output for your printer or modem.

Missing Speedscript

I ordered TPUG disk (C)T6 specifically for the Speedscript *word processor. On reviewing the disk after receiving it, I found that* Copy File.C *is on the disk instead. What happened to* Speedscript? *Please tell me what action is necessary to obtain the above word processor.*

A.S. Dale
Nepean, Ontario

Speedscript was sent to David Bradley as a submission to the TPUG library, and it was included on (C)T6. Shortly thereafter, it was discovered that this is a *COMPUTE!* program. It was immediately removed from the disk, since *COMPUTE!*'s programs are not in the public domain. *COMPUTE!* maintains that using the program without having a copy of the magazine in question constitutes copyright infringement. Although this issue is a constant subject of debate in magazines and on bulletin boards, TPUG respects *COMPUTE!*'s position, and never knowingly distributes any programs that are not in the public domain. So... *please* do not submit programs that are the property of COMPUTE! Publications.

As far as obtaining a copy goes, try to get a copy of the March '85 *COMPUTE!*, which includes the enhanced version — **Speedscript 3.0.**

Compute By The Stars . . .

I am a professional astrologer, new to computing, who would like to find astrological software. Can you recommend a program?

A. Blayer
Edmonton, Alberta

I have King Microware's **Astropositions**, which does positional astronomy and has an astrology option. The output consists of time factors, planetary positions, house cusps (using the Regiomontanus system) and the list of aspects. Note that the output is in text. If you're looking for something that will print a complete chart, with glyphs and house divisions, you'll have to look further. Two other possible sources are: AGS Software, Box 28, Orleans MA 02653 and Matrix Software, 315 Marion Avenue, Big Rapids, MI.

Matrix has a package for the Macintosh that is almost certain to have graphic output. Also, you might like to check out a book from Sybex. *Astrology — On Your Personal Computer*, by Hank Friedman, gives a complete run-down on the pros and cons of software for astrologers.

Which Printer? Which Modem?

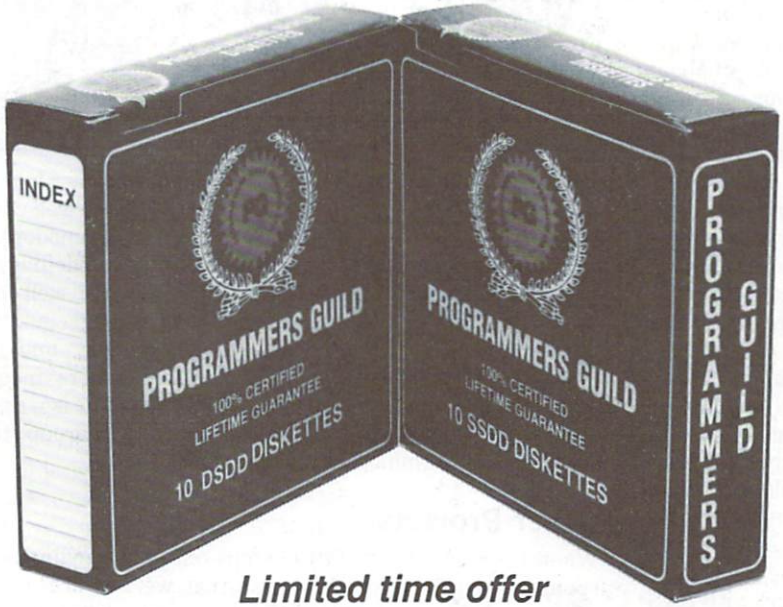
I am using a C-64, with a disk drive and a monitor, and I am considering the purchase of a modem and dot matrix printer. If the club has done any evaluations of different equipment, I would appreciate any comments. I would like a printer with true descenders, that will do all the Commodore graphics, and will allow the dumping of images from drawing programs such as Doodle.

R.G. Eagle
Prince Albert, Saskatchewan

There are a number of modems available, and a bewildering array of printers. The main thing to keep in mind is: will it work with the software I have/want to use? Obviously if you buy Commodore products, all the software you buy will be able to handle them, but some third-party hardware may not be compatible. First, the modem: the Commodore modems are the 1600, 1650 and 1660. Other popular ones are: Mitey Mo, Westridge, HESmodem and Pocket Modem. The TPUG library has good terminal programs for any modem you're likely to buy for use with the C-64.

The printer is a much more complicated issue. All the modems plug into the user port, but a printer can be interfaced through the user port, the cartridge port or the serial bus. Few software packages will allow you to send data to all three ports. One very popular printer/interface combination for the C-64 is the Star Micronics Gemini 10X, with a Cardco interface. Another interface in wide use is Batteries Included's Buscard II, which has the added advantage of an IEEE interface that allows you to use Commodore dual drives (4040, 8050, 8250). The Buscard also includes a machine language monitor and BASIC 4.0. Once again, determine your software requirements *before* you spend your money on extra hardware.

If you have a question for The Answer Desk, *please send it to:* The Answer Desk, *c/o TPUG Magazine, 1912A Avenue Road, Suite 1, Toronto, Ontario M5M 4A1, Canada.* □



Limited time offer

SSDD - $15.00/box
DSDD - $20.00/box
(Minimum purchase - 5. Delivery extra.)

Switch

to the highest quality, lowest priced brand name diskettes available in Canada.

Q. Who has switched?
A. Professional and educational institutions, national accounting firms, major engineering firms, software houses, computer retailers and the Toronto Pet Users Group.

P·G

Programmers Guild Products Ltd., 255 ManuLife Place, 10180 - 101 St., Edmonton, Alberta T5J 3S4 Phone: (403) 428-6229

VISA MasterCard

A Club For Commodore Users

by Gerry Gold and Louise Redgers

The Toronto PET Users Group started out as a small band of users deeply interested in Commodore computers, at a time when there was no software and little help. The major software authors for the Commodore computers all started with TPUG. In those early days we had people like Steve Punter, Brad Templeton, Steven Douglas and Jim Butterfield, who were highly active in helping others to understand what they themselves had already conquered. The first president of the club, and later the board of directors, pledged to produce a library of public domain software, and meetings with high quality presentations. While our success has not always been unmixed, TPUG is continuing to strive for these high goals.

Two years ago, it was decided that TPUG should expand beyond the local members and that we had something to offer to those farther away, especially in our library offerings. At that time an ad campaign appeared in *Compute!*, and a drive for international membership was undertaken. Commodore computers had spread far and wide, and with them went the need for good information and software. By early 1983, our membership in the Toronto area was equalled by that from outside. We offered our more distant members access to the library and the magazine, while continuing to also offer meetings to local members. At that time, we had to begin dealing with the duality of being a professional operation, while maintaining our image as a club. This duality has not been easy to live with.

The TPUG Library

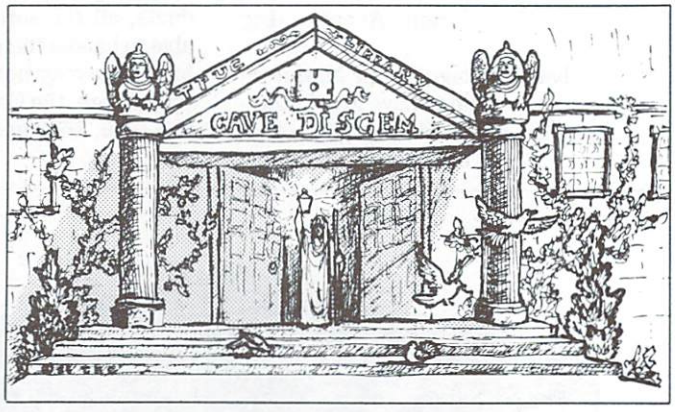
TPUG has a commitment to high quality public domain software. When the demand for Commodore 64 software took off about a year and a half ago, we undertook to expand our offerings and move many of the favourites from the PET to the 64. At the same time, we were producing a disk of the month for the VIC 20. When VIC sales began to decline, TPUG continued to support them, and will continue to do so. A year ago we did a survey that revealed, among other things, that only ten per cent of our members owned VICs. TPUG sees its function as offering support to those who are small in number but have a strong interest, as does this group, in a particular aspect of Commodore computing.

Smaller groups and special interests seem to be part of the future of TPUG. We are currently running and supporting Communications, SuperPET and COMAL special interest groups, to name a few. We have library contributions that support these groups, and we hope that they will encourage others to contribute to our offerings with the items they write to get better mileage out of their computers. An example of the benefits this attitude can bring is to be found in the SuperPET library, which boasts a statistics package on a level with SAS and SPSS, a collection of scientific routines that was used to develop a satellite tracking system, and many other more sophisticated pieces donated to the public domain. The adaptation of Micro Ware's OS/9 operating system to the SuperPET is another area of special interest development that we are expecting to create a new section in our software library.

The C-64 library has become the backbone of the club's income. It is now at the level of importance that we currently have a full time librarian on staff to improve and expand our software offerings. This will also aid in our getting software to the users faster, as he has the time to concentrate on getting the latest software out as quickly as possible. Volunteers do an excellent job, but one must wait for them to have the time to donate to the task of putting together new disks. In March 1985, our C-64 librarian was able to put together eleven disks in a single month, comprising some special interest disks and a monthly disk of the usual collection of general interest software.

TPUG Magazine

Undoubtedly the magazine is our most valuable asset at the moment. Our survey told us that the magazine was as important as, if not more so than, the library. We don't fill our magazine with program listings — after all, there are plenty of programs available in the library. Instead, it was designed to provide help that cannot be found elsewhere. From its origins as a four-page bulletin four years ago, it has become an increasingly interesting monthly publication.



This year we have tried to give the magazine a new look, more reflective of the special interests of our diverse and well-educated population. Feature articles on The World of Commodore show, on computer chess and on mathematical modelling, have provided examples of the kind of topic that can be well covered in our new format. Because it is still a club magazine, we can use it to tell you what's new in our library, and in the organization. Most importantly, it is our members' magazine, not a slick professional concern. *TPUG Magazine* is written by our members, and reflects the deep interests of a group still concerned about Commodore computers.

Other Projects

When there is a need, TPUG steps out of the mainstream to sponsor special projects in areas that we feel are not given adequate support elsewhere in the Commodore community. Consider a couple of instances:

• COMAL is the language that took Europe by storm and has excited many North American users. TPUG undertook to produce for our members an inexpensive reference guide to COMAL, written by COMAL creator Borge Christensen, to accompany the disks in our library. This book — our first publication other than the magazine — sold out quickly and is now in its second printing.

• When Avy Moise and Gerry Gold heard that Waterloo and Commodore would soon discontinue support for the SuperPET, they felt that this machine — potentially the fastest and most capable of all Commodore computers to date — deserved a fifth generation operating system. OS/9 was born for Commodore. Within four months of receiving the source code from Micro Ware, TPUG began shipping Version 0.9 of OS/9 for the Commodore SuperPET.

There are other projects under study to continue interest in the PET/CBM line. For example, TPUG is aware that it must be able to contact members anywhere in North America in a few hours, to answer questions and provide software. Beginning next fall, the club hopes to provide free to members an information service that spans the North American continent. Negotiations are now in the final stages for providing this online service. More information should be available soon on this unique project — watch for updates in future magazines.

In sum, TPUG has changed rapidly to reflect the changing needs of its members. The average member is university educated, and many have some technical training. TPUG members often own other computers (though obviously they prefer using their Commodores) and are probably more aware of developments in the computer world than the average person. We are also following those developments. For instance, Commodore Canada will in a few weeks be releasing an IBM clone, and we are expecting a demand for user services. TPUG will be ready. The release of the Commodore 128 is also around the corner: we are currently looking into software for that machine, and again expect to be ready to meet the new demands. The 'Amiga' 68000-based computer is by now almost a myth with all Commodore users, but we stand ready and able to support that machine too, when it at last appears. □

The TPUG Software Library

by Michael Bonnycastle

The TPUG Library is a unique institution in that it contains literally thousands of programs that have been donated over the past five years by members. It contains *no* commercial software, and it is *all* public domain and unprotected — if you obtain a disk it may be copied for your own use or you may copy it for friends. The documentation on the disks is protected by copyright, but is free for copying for non-commercial purposes. This attitude reflects the philosophy of your club. We want to make as much information as possible available to our members at the lowest possible cost.

How did this start? Originally, when the club was very small, members met and exchanged programs (on tape, of course — disks were not available then). A speaker might illustrate a program for writing music, or a sort utility, or a super monitor program, and after the meeting would load the program into four or five machines. Then members would line up to take turns 'saving' the program onto their own tapes. Not very efficient, but then there weren't many programs around, and something was far better than nothing.

Lyman Duggan (our founding president) then tried out another scheme. He collected master tapes in a box (perhaps fifty of them) and, during the coffee break after the presentation, you could 'borrow' a tape (in exchange for your driver's licence), go to a machine and load the borrowed program into memory. Then you could save the program onto your own tape and then return the master tape to Lyman and collect your security deposit. If the program you wanted was out, you could go and line up behind the person who was currently copying it and take your copy while he was returning the master. That system was okay, but there were always too few machines, and the process was very, very slow. We did make a lot of new friends in the lineups, and it was a good opportunity to chat with our neighbours.

Then disks appeared. It was a bonanza. Speakers and members would give copies of their programs to the 'librarian', who would create several 'master disks' as the meeting was in progress. After the meeting you could copy the master onto your own disk using one of the half dozen or so machines that were available. Around that time, I remember Jim Butterfield giving me ten *full* disks of programs from a club in the US, saying, "Here, Mike, see if you can get these out to our members." At that time, Dave Hook was our librarian. He took those ten disks, integrated the programs by category into the existing library (which had grown up around tapes), and came up with about thirty disks that formed the foundation of our library. We then took copies of the masters, and at several meetings and special occasions we set up machines for copying, and spent entire evenings encouraging members to copy part or all of the library for their own use.

There were a couple of problems. There were too many library disks and not enough time for copying. And, as the volume of copies increased, the wear and tear on the disk drives became prohibitive. People who offered their machines to be used for copying found they were being wrecked. Reluctantly, and after a great deal of debate, we chose to replace the copy sessions by providing pre-copied, guaranteed versions of our library disks. We had to use a good quality disk, and incorporate the cost of machines as well as disks into the cost of a TPUG disk.

With the advent of the SuperPET and the C-64, we split our library, and spread the responsibility for the libraries among those who had an interest in the different machines. Currently, Bill Dutfield oversees the SuperPET library, and acts as the co-ordinator of the librarians' committee. David Bradley became our C-64 librarian, while Mike Donegan retained the responsibility for the PET or 'greenscreen' library. The VIC and COMAL libraries, and others such as the Commodore Educational Series, fill out our library sections.

In all, there are about 225 disks in the library, and at ten dollars a disk, together with discounts if you pick up a disk at a meeting or the office, or buy in quantity, we feel that the value a member gets from a TPUG disk is second to none. While nobody actually buys the complete library, there is an incredible choice, and there should be something for everybody's interest. Why not call the office and ask for a current listing of the library that interests you, and see if there's something that excites your imagination? □

TPUG Chapter Meetings

by Louise Redgers

TPUG meetings have changed a lot since I first started to attend them. I came on the scene at the time when fifty members was a good turnout, and the meetings were being held in a lecture theatre at Sheridan College in Oakville, about forty kilometres south-west of Toronto.

Once each month, a group of very dedicated Torontonians would head out to Oakville in rush-hour traffic to find out the latest about their Commodore computers. We would all sit there for an hour or two, very intent on finding out what the new programs that would be available for copying after the meeting would do for us. Jim Butterfield, Dave Hook and Michael Bonnycastle were just a few of the members who were showing off their latest works of programming art.

The demos were bumpy in places, as not everything worked as it should, but it was often more interesting, from a programmer's viewpoint, to watch the demonstrator show you how to fix a problem, than it was to watch the end result.

. . . We often wonder if we did the right thing by splitting along machine lines rather than by level of expertise . . .

Perhaps the best part of the evening started when we all headed for the computer lab and started to copy programs and chat with old and new friends. The meetings that TPUG holds now often lack that initial intimacy in which, if you were new and looking a bit lost, some kind soul would take you under his wing and introduce you to his friends, who in turn would introduce you to still others. Soon you would know almost everyone who was in attendance and the faces, names and the ultimately useful phone numbers became very familiar.

Well, TPUG meetings have grown, and not necessarily for the better. While it is very gratifying to know that one can get 300 to 500 people out to a meeting (as in the case of the C-64 group currently), there is a feeling that we are often driving people away because we appear to be a cold organization, not meeting the needs of many of those in attendance.

At the time the VIC 20 owners started to outnumber the PET/CBM users at the meetings, the board of directors met and decided that it would be best if those who had this new computer — which would not run the same software — had a separate meeting. Originally, this was held at the same time but in a different room. It was crowded, and lacked the use of a projector for displaying the screen image onto a movie screen. Separate evenings and locations followed, as the two groups had rather divergent interests. We often look back now and wonder if we did the right thing by splitting the group along machine lines rather than by level of expertise. The Commodore 64 initiated another split group, again along machine lines. This works well when the machine is new and many of its features are extremely different from those of existing computers, but once the novelty wears off the problems begin.

As the co-ordinator of the Commodore 64 chapter, I am constantly faced with the problem of what to do at meetings to entertain people who are at various levels with various interests. They range from the rank beginner who just got his first machine last week, to the hardware hacker who wants to know how to get his machine to drive everything but the family car. Caught in the middle are the folks who just want to know about the latest business software (yes, there really are a fair number of small businesses using the Commodore 64), the student who wants to learn Logo or COMAL, the parent or teacher who is looking for the latest and best educational software, the gentleman who wants to play better music on his C-64, and many others.

How does one wow a room full of these people all at once? Jim Butterfield has a knack for doing just that, but we cannot expect him to speak every month. Gone are the days when a brave soul from the club comes forward and says, "I wrote this little program last month — could I have ten minutes to show my fellow members how one gets a dog to chase a cat across the screen?" How does one get back to that level? I have been struggling with that question for over a year, and the answer has not come to me yet.

Running meetings can be very gratifying to the coordinator, because at least some of the members will come up and chat, and you get to know who is interested in what type of computing. It is also very frustrating every month when you search for new topics of interest and new demonstrators. Helpful suggestions are always welcome, even though they may not be moved upon as quickly as one would like.

Talking to members and making new friends is the ultimate role of the meetings, and I see less and less of this going on each year. The next time you go to a club meeting, go up and introduce yourself to some of your neighbours. Talk to them about your interests. If they are similar, exchange phone numbers. It is always comforting to talk to someone who is interested when you are struggling with the question of which software or hardware to purchase this week. Networking and sharing of information is what most associations exist for, and is the best way for you to get more mileage out of your membership. I have yet to meet a computer owner who will not talk to another one, but there appear still to be a lot of lonely people wondering around lost in the maze of computerdom.

Meetings should tell the user what is new. TPUG endeavours to do this by keeping in contact with software houses and Commodore. They let us know what is going on with a constant stream of press releases for the magazine, and other clubs pass information to us through their newsletters. We try to then tell our members about the latest shows, the hottest software and the new machines. This fills one information gap. There are other gaps, though, harder to fill.

Teaching programming is a function that TPUG has not taken on in any major way. We assume that the local boards of education and others do this better than we can, to a large degree. We do, however, try to provide a forum for questions to be asked and answered. If the meeting that you attend does not, ask the coordinator. He or she usually can answer a question for you, or point you in the direction of someone who can. Better still, ask for an open forum to be provided at your meeting.

Every once in a while, something comes along and captures the imagination of the user. It may be a commercial software

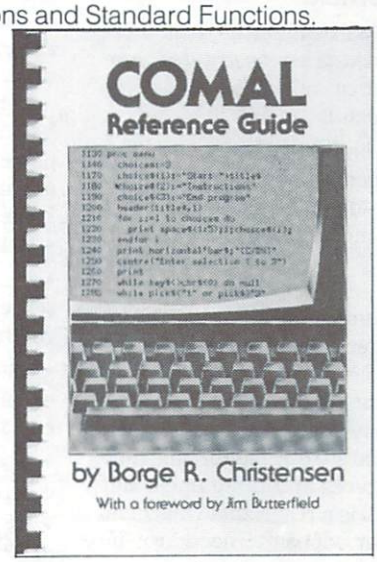
package or a new noise that can be evoked by doing wild and wonderful things to the SID chip. These should be pointed out to the coordinator and demonstrations for the group arranged. TPUG tries to find and check out new speakers for its annual conference at local meetings, but in this we are limited to local speakers, as travel arrangements are expensive.

It would be great if we could provide hands-on computer tryouts for new machines and new software, but this is just not possible with so many users and so few machines. Some clubs have the members bring their own equipment to meetings so that they can try the latest public domain software and learn the latest programming techniques. This is great, if you have enough power outlets, but not very practical for most TPUG meetings. We have attempted to create more intimate groups, though, with our Special Interest Groups. We currently have groups interested in COMAL, Hardware, Communications, the SuperPET and Machine Language. We have a group for business users, and another one for new users. These help, but they take a lot of dedicated people who donate their time and energy to get them started and keep them going each month.

If you have just attended your first computer club meeting, and have walked away shaking your head because you did not understand much, take heart. Attend three or four meetings before you decide that this is not for you. Each month you will understand a little bit more, and you will make some helpful friends who can explain even more if you ask. Chances are that if you just walk away after only one meeting, your computer is going to end up in the closet gathering dust. We can help open up the world of computing for you, but you must put in an honest effort to get your feet wet. We were all lost at our first meetings. Hang in there — the rewards and friendships will be unbelievable. □

COMAL
REFERENCE GUIDE

Sixty-four pages outlining all the C64 COMAL keywords, with sections on the language's superb String Handling, Procedures and Parameters, Expressions and Standard Functions. **$9.95**



Send cheque or money order to:
TPUG Inc., Dept. A., 1912 Avenue Rd., Ste. 1, Toronto, Canada M5M 4A1

OS/9 IS HERE

TPUG has implemented the popular 6809 operating system 'OS/9' on the SuperPET. Super-OS/9 greatly expands software availability and the hardware capabilities of this computer while at the same time preserving access to the Waterloo languages and programs.

The cost of Super-OS/9 to club members will be $195 (Cdn.), which will include the cost of a hardware modification that will not affect the normal operation of the SuperPET. Two board SuperPETs require a simple hardware modification — we provide instructions. To obtain your copy please send $195 (Cdn.) to: TPUG (1912A Avenue Rd., Suite 1, Toronto, Ont., M5M 4A1, Canada).

What does Super-OS/9 offer?

- A true operating system with UNIX features and the simplicity and command style of Commodore BASIC;
- Multi-tasking and multi-user environment;
- Multi-level directories similar to those available in MS DOS 2.0.;
- Time and date stamp for all directory entries (files);
- File access privileges may be restricted by the owner of a file.

Extensive software is available for OS/9, most of which will run on the SuperPET.

The Super-OS/9 package includes an assembler, editor, command (shell) library monitor, symbolic debugger and 25K RAM Disk.

Available Languages (compilers) include BASIC-09, Pascal, CIS-COBOL, 'C' Language, and others.

Available Applications Programs: Word processors, business, inventory and accounting applications.

Public Domain: Software, relational database and spreadsheets, extensive public domain software and documentation.

TPUG will acquire public domain software and assist users in the conversion of commercial software to Commodore format.

Portability and Expandability

- Super-OS/9 programs will run on all OS/9-based microcomputers.
- Super-OS/9 will run hard disks and parallel drives.
- There will be source code compatibility to versions of OS/9 that are planned for the Motorola 68000.

For information call TPUG Inc. (416)782-8900
(416)782-9252
For technical information
Gerry Gold (416) 667-3159/225-8760
Avy Moise (416) 667-3954/667-9898

In Praise of VIC 20

by Jim Butterfield

Copyright © 1985 Jim Butterfield. Permission to reprint is hereby granted, provided this notice is included in the reprinted material.

It's been going on for two years now. The pundits have been gloomily predicting: "The VIC 20 is dead. Commodore is not making it any more. It's not an appropriate computer . . . " And that sort of talk annoys me.

Yes, the Commodore 64 has more memory, a bigger screen, more colour options, sprites, better music and a lot of flashy software going around. And I agree that many users will feel that it's time to 'graduate' to a bigger machine with more features and fun games. But the little VIC 20 is a respectable machine, and an owner doesn't need to be ashamed.

I'm not sure about this "Commodore doesn't make them" argument. Commodore sets up a production line and makes a zillion units of whatever device is involved. These units get warehoused, and the production line is broken down so as to be converted to make something else. At any given time, it could be true that Commodore is not making 1541 disk units, or filing cabinets . . . or VIC 20 computers. So what? If demand continues and stocks run low, Commodore will just set up a new production line.

VIC 20 is still a bargain-price machine. That alone makes it attractive. I would still say to beginners, "If you want a training machine, try this one. Don't go into memory expansion or great numbers of game cartridges, since you may discover you want to step up and will have to discard these extras. But buy a disk and printer, if you like; they will still be good if you move up to a C-64."

When you're a novice and you buy your first computer, you'll use it to find out about two important things. Important Thing Number One is the world of computers. You'll learn the buzzwords, simple programming, and what the machine is capable of: its limitations and its potential. The next time around, you'll know much more about selecting a computer.

Important Thing Number Two is that you'll learn about yourself. Do you hate computers? Okay, you've just saved a bundle by not buying a big one. Do you have an interest in programming . . . or music . . . or graphics . . . or games . . . or business applications? Then you'll know what kind of computer to buy next time.

Let me list some good things about the VIC 20. Sure, there are bigger and more powerful (and more costly) computers, and it can't be all things to all people, but I like these items in particular:

- It's low priced.
- It has big, plump characters on the screen, ideal for beginners or young children — or poor grade TV sets.
- The user manual packed in the box is excellent (much less confusing than the one for the C-64).
- It's the fastest Commodore consumer computer.
- Its BASIC and Operating System (I don't include sound and graphics here) is very similar to that of the Commodore 64.
- The screen resolution is about the same vertically and horizontally (176 by 184 pixels), giving good graphics possibilities.
- Screen resolution is such that you won't get 'artifacting' or colour smear such as may happen on higher resolution machines such as the Commodore 64.
- The screen doesn't go blank when you read or write tape.
- If you're a hardware hacker, it's easier than the C-64 to interface to external devices, and is much faster in terms of sensing external signals.

. . . The little VIC 20 is a respectable machine, and an owner doesn't need to be ashamed . . .

It may be an ideal process controller. Build a custom program into a ROM cartridge, plug external devices into the user port, and it will happily work away at whatever job has been defined. In some cases, the traditional input and output may vanish, since a TV/monitor may not be needed and the computer might be tucked away where nobody would normally touch the keyboard.

If you've passed through the Atlanta airport, you may have noticed a little automatic train that transports users between terminals and gate areas. It opens and closes its doors and has a voice synthesis unit that says things such as, "This train is late leaving because someone is blocking the doors." Guess what computer runs it? Right — the VIC 20.

When the Commodore 16 was first announced, it seemed likely to obsolete the VIC 20 once and for all. The new machine is low-priced — not as low as the VIC 20, but it has 40 columns, 16K of RAM and a greatly expanded BASIC. Yet it hasn't done so. Jim Strasma thinks this is because the C-16 has no communications port, and modems are very popular with VIC 20 users. Don't get me wrong: the C-16 is nice and, if your objective is program writing, you should consider it quite seriously. But the VIC 20 still lives.

Software is thinner than we might hope for: magazines and user clubs seem to bypass the VIC 20. It's not snobbishness. Let me tell you what *my* problem is, in this area. If I wish to write an advanced program — say, one using machine language or special graphics — I must face two problems. First, it might not fit at all into the little 5K VIC, and I must add the qualifier, "Runs only on expanded VIC 20 computers". This bothers me, because I like to write universal code whenever possible, but there's a greater difficulty. The VIC's architecture shifts around depending on what memory has been added. The screen might be at 7680 or at 4096. BASIC might start at 4097 or at 1025 or at 4609. This makes it tough to write a single advanced program that will fit any configuration.

If you have a VIC 20, don't be ashamed of it. You may want to switch to another machine, and that's okay; there are many reasons to do so. You might want the extra software that other machines offer; you might need forty columns (or more) for your work; you might be enthused about music; you might want lots of memory; you might want a new graphics system; or you might have fallen in love with a program that will only play on a bigger machine.

When you're ready to graduate from the VIC-20 to another machine, go for it. Your time with the little machine will stand you in good stead. But in most cases, the VIC 20 won't be junked or sold. It's an old friend, and you'll likely put it out to pasture as a games machine in the recreation room. □

Machine Language Converter

by David Archibald

Occasionally I write a machine language routine that I want to use with a BASIC program. This usually means converting the ML program into **DATA** statements, and having my BASIC program poke it into memory. But what is easiest for me as a programmer is not always easiest for me as a typist! Converting a one or two hundred byte ML program into **DATA** statements is not only a long typing job, but the chances of making mistakes when entering all those numbers is pretty high.

With this in mind I wrote **Converter**, which will convert your ML program into a BASIC loader, and save it to disk.

Load your ML program, then run **Converter**. You'll be asked for the starting and ending addresses of your ML program, a file name for the BASIC loader, and a starting line number. Pick one that won't conflict with the line numbers of the BASIC program you'll be merging it with. The default (**RETURN**) is ten. Keep in mind that the highest line number the program will allow in the BASIC loader is 63900: don't start your first line so high that you run out of numbers.

Converter sets up the loader so that you can use it as a subroutine — the last line has the single instruction **RETURN**. Delete this line if you intend to use the loader alone, rather than as a subroutine. □

```
10 rem*******************************
20 rem*   converter      2/18/84   *
30 rem*   david archibald          *
40 rem*   (313) 736-0239           *
50 rem*******************************

60 close5,15:print"{clr}":z0$=chr$(
   1)+chr$(4)
70 printspc(15);"{rvs}converter":
   print
80 print:print"ml programs starting
   {space}address":input"(in decima
   l)";sa
90 if sa<0 or sa>65535 then 80
100 print:print"ml programs {rvs}en
    ding{off} address":input"(in de
    cimal)";ea
110 if ea<0 or ea>65535 then 100
120 if ea<sa then 80
130 print:print"save program under
    {space}what file name":input na
    $
140 if na$="" then 130
150 print:print"start line numbers
    {space}at what number":input"(n
    ull=50000)";ln
160 if ln=0 then ln=50000
170 ifln<0 or ln>63000 then ln=0:
    goto 150
180 if (ea-sa)/12*10+ln<63900 then
    {space}240
190 print:printspc(15);"{rvs}warnin
    g!!!"
200 print"{rvs} starting line numbe
    r may be too high!!!
    {shift-space}"
210 print"do you wish to change you
    r starting"
220 input"line number (yes/no)";a$
230 if asc(a$)=89 then 150
240 open15,8,15:open5,8,5,na$+",p,w
    "
250 input#15,e,e1$,e2$,e3$
260 if e>0 then print:print"{rvs}";
    e;e1$;" ";e2$;" ";e3$:goto 510
270 tp=ln:gosub 610
280 rem *output load address and
290 rem *first line number.
300 print#5,chr$(1);chr$(4);
310 print#5,z0$;chr$(lsb);chr$(msb)
    ;
320 rem *output 'for zz='sa'to'ea':
330 rem *read zx:poke zz,zx:next zz
    '
340 print#5,chr$(129);"zz";chr$(178
    );
350 print#5,str$(sa);" ";chr$(164);
    str$(ea);
360 print#5,":";chr$(135);"zx:";
370 print#5,chr$(151);"zz,zx:";chr$
    (130);" zz";chr$(0);
380 rem *print 'return' on next lin
    e*
390 ln=ln+10:tp=ln:gosub 610
400 print#5,z0$;chr$(lsb);chr$(msb)
    ;
410 print#5,chr$(142);chr$(0);
420 rem *get ml program and convert
    {space}to
430 rem *data statements.
440 for t=sa to ea:a$=str$(peek(t))
450 sl=sl+len(a$):if sl>24 then
    {space}gosub 530
460 ds$=ds$+right$(a$,len(a$)-1)+",
    "
470 next t
480 gosub 530
490 rem *end file with two zeros*
500 print#5,chr$(0);chr$(0);
510 close5,15:end
520 rem *output 'data ...' statemen
    t
530 ln=ln+10:tp=ln:gosub 610
540 if ln>63900 then 580
550 print#5,z0$;chr$(lsb);chr$(msb)
    ;chr$(131);" ";
560 print#5,left$(ds$,len(ds$)-1);
    chr$(0);
570 ds$="":sl=0:return
580 print:print:print"{rvs}line num
    ber too large":print"program en
    ded":goto 500
590 rem *convert line number into
600 rem *split decimal.
610 msb=int(tp/256):lsb=tp-256*msb:
    return
```

A SuperPET Carshow

by Brad Bjorndahl

Many SuperPETs were originally purchased because five different high level languages are included with the machine. No doubt many SuperPETs were *not* purchased for the same reason.

Why are there so many languages? Isn't BASIC enough? Why didn't they get it right in the first place? Why are there so many dialects? Did the original versions have errors?

I would like to answer these questions, but that would require not only knowledge of the languages, but also a recounting of the history and philosophy of computing science. In other words, I am not qualified. The SuperPET has been a great help to me, though, in putting the languages in perspective by letting me experiment and play with them. I have learned that each language has its own character, which makes it more useful or more elegant for some applications than for others. Without getting into details of syntax and structure, let's now look at each of the SuperPET's languages in turn.

The first language is familiar to most of us. I visualize BASIC as a motorcycle with a sidecar in which you (the user or programmer) are calling out directions to the driver. Unfortunately, the driver is an elephant who, though he hears well and is very intelligent and cooperative, interprets your instructions any way he damn well pleases. Your job is to express yourself in a way that takes you where you want to go, even if you hit the kerb a few times along the way. **RUN** and **STOP** work quite well, thank goodness, but **GO TO where I was last night** will head for the nearest tree. **GO TO 100** will keep you on the road, assuming there is a road 100, but it may be the wrong direction. Worse yet is **GO TO the right** without additional instructions. This will cause you to travel in circles — an 'infinite loop'.

Next consider Fortran, which I see as an ancient pickup truck. It has a rotted wooden box and bald tires, and is held together with crazy glue. It runs on gasohol made from manure at a run-down farm two hundred miles north of here. It is no fun to drive, but it will get you to your destination. This truck is so old that it would hardly run at all without some modern parts patched onto its rusting body. For example, Fortran allows 'execution time formatting', which gives a programmer a means of defining the structure of records in a file while the file is being read. It is very powerful, and is often missed by programmers who move onto more modern languages. However, it would never be necessary if Fortran allowed records to be read properly. In fact, many computer installations that provide Fortran have modified the language so that records can be re-read. The patches on Fortran show a definite lack of foresight, but remember that Fortran was a pioneer language. It is still quite popular, and has a lot of support in terms of amount of software.

. . . I can't decide if the C language is a high-powered sports car, a moped or a space shuttle. . .

The COBOL language is a late 1950s passenger car with the useless features of that period: large fins, two tone paint job, oversized engine that eats gasoline. On the other hand, it is very well maintained and gives a feeling of comfort when driven. For example, COBOL allows you to write code that sounds almost like English, things like: **PERFORM UPDATE-ROUTINE UNTIL END-OF-MASTER-FILE AND END-OF-UPDATE-FILE**. Debugging can also be relatively easy, since COBOL puts records and data in preset locations that can be listed and examined by programmers. One of its useless features that, I believe, is no longer provided on newer versions of the language, is the **ALTER** verb. It is possible with this command to change the destination of a **GO TO** during execution. Imagine the debugging tangles that could lead to.

Pascal is a more modern vehicle, perhaps one of those K (or L or M or whatever) cars. It is more streamlined and fuel efficient than earlier designs like COBOL. It is easier to use, with features like power steering ('pointers') and power brakes ('types'), but it lacks some needed engine capacity. In particular, Pascal has been criticised for weakness in the i/o area. Its strengths are its rational, 'standardized' features for structured programming. Just as automobile manufacturers design parts to be interchangeable between models, so the modern languages use interchangeable programming statements. A great deal of time and energy is saved if everyone knows and agrees on the meaning of **WHILE** and **FOR**.

APL is an all-terrain vehicle; it can go just about anywhere, but it is easy to get lost and can be dangerous to your (mental) health. APL is a lot of fun to explore, and to explore with. It can be addicting, because there is always another way of getting where you want to go. APL has a strong mathematical flavour with its Greek symbols and inherent matrix (array) handling features. APL assumes that every variable is an array, and this simple fact makes it different from all conventional languages. For example, addition can be done on one variable (by adding its entries) or two (adding corresponding elements). Addition on one variable can also be done by adding the first element, then the first two elements, the first three, and so on, to give an array with the same dimensions as the original. Two arrays can be added after rotating one of them like a chain of beads. Arrays of more than one dimension can be added along the first (row) or second (column) or other dimension. The options are endless, and after figuring out what they are, the programmer then has to figure out what they can be used for. APL has to be seen to be believed.

With OS/9, the C language will become available on the SuperPET. I've seen a little of it, but not enough to decide if it's a high-powered sports car, a moped or a space shuttle. I know that it is foolish to push analogies, but I can't help wondering what a language would look like that corresponds to: a train (efficient but with inflexible routes); an aircraft (fast but low capacity); or a bicycle (fun, efficient, easy to learn, but can't go far).

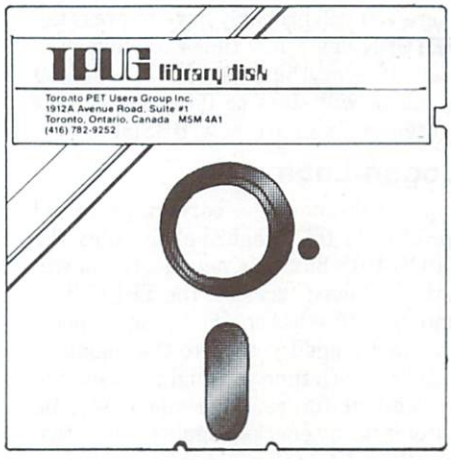
Processors that execute more than one instruction at a time, artificial intelligence and expert systems, are being developed right now. A little experience with existing languages will go a long way towards understanding trends in the computing industry. The SuperPET can provide that experience for those who are interested in, afraid of, obsessed with or confused about what to expect in the future. □

TPUG
LIBRARY DISKS

10 months of the latest, fabulous public domain software

ONLY

$79.95*CAN



SAVE 20% or more by using this offer

Subscribe now to start receiving the ***TPUG disk of the month*** *in September*

*US orders US$59.95

Name _____ Membership # _____

Address _____

_____

☐ Cheque ☐ Money Order ☐ VISA ☐ MASTERCARD Amount $_____ Currency ☐ Can. ☐US

Credit Card # _____ Expiry date _____ Signature _____

Type of disk: ☐ C-64 ☐VIC 20 ☐ PET ☐ SuperPET (10 disk set)

A Beginner's BBS Guide: Part Two

by Ian A. Wright

Bulletin boarding has become very popular in recent months and modems are among the hottest selling peripherals. To some extent, this popularity results from a multi-media blitz caused by stories about 'hackers' presented in the movies, on television and in print. Real telecommunication, however, is an enjoyable and often very useful activity, not — as the media often portray it — a solitary and destructive one. In the first of this series of articles, Ian described some of the uses of bulletin boards. This month he explains the proper procedures for accessing a board. Where possible, the examples are drawn from TPUG's own Bulletin Board System (BBS).

Ring . . . Ring . . .

You have just arrived home with a new modem and terminal program for your Commodore computer. First, please sit and read the manuals and instruction booklets that accompanied these items. I know people who have destroyed computers, modems and disk drives by plugging peripherals into the wrong places. No matter what computer/modem combination you have, you should follow the modem assembly and terminal program loading instructions, double checking all the way. Then, if you live in or around Toronto, dial TPUG's BBS at 416-782-9534. You will almost certainly not get through right away — sometimes you will dial for over an hour before the phone rings because the TPUG BBS, despite 24 hour service, has about 700 current users, many of whom are trying to access the line just as you are. At this point, an automodem will seem like a truly worthwhile investment!

Once you have got through to the BBS you will hear a high pitched squeal. You should now switch your modem to data (for direct connect and automodems), or insert the phone into the cups of the modem (for acoustic modems). How you get to 'terminal mode' will differ depending on your terminal program, but once there you will probably have to press the **RETURN** key a few times to make contact. If everything is OK, an opening message will start to flow across your screen and you are now BBSing.

Logon-Login

You must know the correct password (printed in this magazine) to enter the TPUG BBS but, as a new user, you will not be allowed access to the TPUG BBS until the office has checked your membership and logged you on to the membership list. Each time you 'login' (access the system) in future, your name will be automatically checked against the active membership list. At this first contact you will read a welcoming bulletin and you will be expected to provide your name, address and club membership number. Most 'Punter-systems' use a similar logon procedure although the specifics may vary slightly from board to board. The last step to joining the system is to enter a six character 'user code' of your own creation. Don't forget to write the code down in a safe place because you will not be allowed future access without it.

If all goes well, you should be able to access the rest of the TPUG board within a week.

Spells and Incantations

The TPUG BBS password was instituted by Tom Shevlin, a former SYStem OPerator (SYSOP) of the TPUG BBS, because of the phenomenal increase in the number of non-member users. With the current limit of about 700 active users on our system, if you don't login for a while, you may find yourself being treated as a new user and having to wait for membership renewal — again. Some other local boards, like the BBBBS and Appleby, are private, and charge a small fee for membership in an attempt to control the flood of users. Only a few, like PSI-WordPro and COMSPEC, are still open boards.

Why all these precautions? Most of the

Selected BBS Commands

READ

A	all messages from last
# F	forward message reading
FROM	messages from a user
*** MINE**	list messages sent by you
NEW	messages since last login
NEXT	continue message reading
*** O**	overview of messages
R	recall a specific message
# R	reverse message reading
*** RALL**	messages sent to 'ALL'
READ	only *your* messages
*** S**	summary of messages
*** TOME**	list messages to you

OTHER

B	enter BULLETIN section
CONT	toggle continuous mode
G	goodbye (same as quit)
HELP	display command list
LOG	who has been on the system
QUIT	leave the system
TIME	current connect time
U	search user list

S, **CTRL-P**, **CTRL-A** and **CTRL-S** are used to pause/restart/abort functions (PET/CBM uses **SHIFT/STOP** to abort).

All functions with a '#' beside them must have either a message number or a reference number entered with them, while those with a '*' beside them may have a number but it's optional. For example, to read forward from message 20 enter **F20**. To survey from message reference 10253 enter **S – 10253** (note the negative sign).

changes have been instituted within the past few years as modems have become cheaper and more popular. There are now thousands of BBSers in the Toronto area alone, and the small percentage making up the 'lunatic fringe' has increased at the same time. The frequency of 'system crashes' caused by an inconsiderate few, and some rather nasty deceptions by other vandals, have forced BBS SYSOPs to institute tighter regulations on access in the interest of keeping their systems working. You can help all of us by selecting an unusual user code. Do *not* use your last name, nickname, or anything similar, and do *not* tell anyone your code, ever. One local board has recently instituted a fee for replacing user codes, and threatens expulsion for those who share their code with others. Sloppy users cause trouble for all, and the unpaid, overworked, and dedicated SYSOPs deserve better.

Now You're On-Line

Your first action as a novice user should be to type **HELP** at the 'Command >' prompt, because this will give you a listing of the allowable commands on the BBS. If your terminal has print capability, and/or a print buffer, this would be a good time to capture this information so you can print it out for future reference. Some of the more commonly used message commands are listed in the box on the opposite page.

When returned to 'Command >', type **F1** to read messages forwards from the current message #1. This message may be reference #10235 (the 10,235th message left on the BBS since it was started), but since fewer than 200 messages can be on-line at any time, the messages eventually 'fall off the disk'. The average life-span of a message on TPUG's BBS is about a week, so unless you login regularly, all the messages you read will have been replaced by new ones. Each time a new message is entered, the existing message numbers are decremented by one until they reach zero and disappear for ever.

You don't have to answer **yes** to the prompt 'Continue With Messages?' if you type **CONT** to switch to continuous message reading. While reading messages you can still hit **S** to pause and restart, but typing **A** will not abort the continuous reading of messages as it did in non-continuous mode. Use **CTRL-A** to skip to the next message, or **CTRL-P** to return to the 'Command >' prompt. **CTRL-S** will exit from various search modes like **TOME**.

The command **NEW** will read all messages entered since your last login, but this will not work until you have sucessfully completed one BBS access. Most of the other read commands, like **TOME** and **RALL**, are explained in the help list — they are designed to speed up access for the experienced user rather than for the neophyte.

So far you have looked over the regular (REG) section of TPUG's BBS. You should now type **TECH** to investigate the messages in the technical section using the same commands as in the REG section. This area of TPUG's BBS was instituted in January, 1985 for entering technical questions like "Should I double-side my disks?" and "What is an IRQ vector?" and answering them — rather like an on-line question room. No questions are too simple. We all learn from the answers.

You will probably find that your time limit will be exceeded when you get back to the 'Command >' prompt again. Like most other BBSs in our area, TPUG had to institute a 30 minute time limit to allow as many users to access the board as possible within a 24 hour period. After 25 minutes on-line you will see 'Time Is Running Out!', and your connect time after every prompt. At 30 minutes you can complete your current activity and you will then see 'SYSTEM TIME EXCEEDED!' and you will be disconnected. The best time to phone a BBS is in the wee hours of the morning when the demand is least, or in the early afternoon if the BBS is open 24 hours. The busiest time seems to be from late afternoon to mid-evening.

If you have some time left, or if you manage to get back on later, you should investigate the bulletin section of the BBS by typing **B** at the 'Command >' prompt. The bulletin section is set up with its own menu of selections and the prompt is now 'sub-Command >' to indicate that you are in a sub-section of the BBS. Be sure to read *TPUG's Ten Commandments*. The material in BBS bulletins ranges from schedules of TPUG events to a review of some of Toronto's bars — it's the SYSOP's choice.

Next time

In the next article I would like to deal with entering, deleting, forwarding, editing and uploading messages to a BBS. If space permits, I will talk about preformatted messages and some of the etiquette of telecommunicating. Till then, if you have any questions please send them to me c/o the magazine — either by mail, or by sending a message to TPUG MAGAZINE on the BBS. □

Marketplace

Got something to sell?

This space could be advertising your product.

Contact Louise Redgers at TPUG Magazine, (416)-782-1861.

Attention Educators!

If you have developed quality educational software, but have neither the time nor inclination for production and marketing, — WE CAN ASSIST YOU!

Our catalogue, consisting exclusively of educational software, is distributed to libraries, schools and Boards of Education throughout Canada.

Contact us for more information.

TRALCO EDUCATIONAL SOFTWARE
Box 6253, Station F, Hamilton, Ontario L9C 5S3
(416) 383-1078

We offer a file transfer Service Commodore to IBM

We can move everything from your word processing to data base files.

Reasonable Rates:
Call or write
George Shirinian
53 Fraserwood Ave. #2
Toronto, Ont.
M6B 2N6

(416) 787-0926 (evenings)

File Teleporting

by Phil Kemp

An important ingredient in a strong computer user community is the sharing of ideas — and of programs exemplifying those ideas. This requires the desire to share, and also the ability to do so easily. One important means of sharing is the transfer of program files by telephone.

Many of us have acquired modems, so we can access Bulletin Board Systems, Comp-U-Serve and other services. Some of us use message systems and other mainframe-based services at work, and now can have access to these at home also. Getting the basic 'dumb terminal' dialogues to work is not difficult once we've determined for each system the right combination of parity, word-length, echo-plex, number of stop bits, and so on. Fortunately, there are only a finite number of permutations of these choices. Almost all publicly available services communicate using the 7-bit ASCII (American Standard Code for Information Interchange) codes to represent characters.

However, when we come to file transfer operations, mass confusion reigns. Almost everyone, it seems, has difficulty with this at first. And when we turn to our favourite magazines and manuals (so often a source of comforting advice) we find tantalizing references to 'protocol brand X', but little hard information. Having struggled through this wasteland, and achieved some modest successes, I'd like to share the fruits of my experience, in the hope that others can progress less painfully.

The first major obstacle is the use (abuse, actually) of the terms 'file transfer', 'uploading' and 'downloading'. Almost every commercial terminal program claims these abilities; unfortunately, the terms are not so ironclad as one might expect. I suggest some more meaningful names for these features in the form they are commonly implemented.

Dialogue Capture: This is the simplest form of 'downloading'. Characters received are saved in a memory buffer, and written to disk or tape at some convenient moment. We command the accessed service to list some file content, and save the buffer content for later review and processing. There are some variations: dialogue capture may be always active, or we may switch it on and off. If our memory buffer is small, then a 'stop' signal must be sent to the sender while we clear the buffer, and a 'send' when the buffer is again ready. This is often referred to as X-ON/X-OFF protocol; unfortunately, many of the services we may access do not recognize these signals. The technique is well-suited for text files (messages from an electronic mail service, or programming tips from Comp-U-Serve, for example).

Auto-Typing: This is the simplest form of 'uploading'. Almost every host service we use has some facility to record what we type: mainframes have text editors; Bulletin Board Systems have message entry commands. So, if we send data by simulating a fast typist, we can have 'uploading'. There are some pitfalls to watch for here.

Our terminal program must know when the host system is ready to receive the next piece of text. In its simplest form the program may simply insert pauses between characters (or groups of characters) long enough to be sure the host will be ready. Surprisingly long pauses (several seconds) may be needed to ensure the host will always be ready, and our transmissions will be slow. Usually the host will send a 'prompt' sequence of characters when it is ready. If we know what this sequence is, we can start sending soon after we receive it, thus minimizing the time to transfer data.

. . . Data communications by phone is somewhat like shouting down a long corridor . . .

How soon? Data communications by phone is somewhat like shouting down a long corridor. When communication in one direction ends, a pause is needed to allow the 'echoes' to die away before sending a reply. A delay of about 1/5 second is often recommended.

Error Checking: The 'dialogue capture' and 'auto-typing' methods of file transfer have a serious limitation. There is essentially no checking for transmission errors. And, in the real world, clean, noise-free phone lines are rare. Now, for text messages, the transposition or loss of a few characters is often not disastrous: the meaning usually remains clear. For a BASIC program, changing **X = 1** to **Y = 1**, for example, can radically alter the logic. And small errors like this are very time-consuming to diagnose and correct. In the case of a machine-code program, changing a single bit of an instruction usually creates a serious problem.

This means that we need error checks for program file transfers. Unfortunately (for those of us trying to understand the process) the simplest checks are rarely used. We could use parity checking, in which each 8-bit character contains 7 bits of data plus a check bit. According to data communications experts, this is a rather ineffective form of checking anyway, and many errors would slip through. Many of the services we're likely to access ignore the parity bit even if we set it. Another approach is to have the receiver 'echo' back to the sender each byte receieved, so that it can be verified against the character actually sent. This greatly slows down the effective rate of data transmission, and at 300 baud (about 30 bytes per second) we already need a lot of patience. So this, too, is unusual.

Most commonly-used error-checking methods employ a 'block transmission' protocol. In this case, a group of data bytes is sent, accompanied by a few extra check bytes. The receiver verifies the check bytes against the data bytes, and replies with an *ACK* (positive acknowledgement that the block is okay) or *NAK* (negative acknowledgement, indicating an error) code. The sender then sends the next block, or resends the last one, as required. The general class of block transmission protocols has many quite different instances. A few of them are of particular interest to the average CBM user with a low-speed (300-baud) modem.

Christensen (or XMODEM) Protocol: Explorers of the BBS world will discover many boards running the CP/M operating system. These generally use XMODEM protocol for program file transfer. Data is sent in blocks of 128 bytes, preceded by a special *SOH* (start of header) byte and the relative block number, and followed by a single check byte. The data and check bytes are related mathematically. Commonly the check

byte is simply the low-order byte of the sum of the data byte values. In some implementations a more effective technique is used, called CRC (Cyclic Redundancy Coding). The receiver can positively identify the start of the block, ensure that the block arriving is in fact the next one expected, and flag most transmission errors. Standard ASCII codes for *SOH* (1), *ACK* (6) and *NAK* (21) are used.

PET File Transfer Protocol: This is the convention used in the CBM Bulletin Boards written by Steve Punter, and is therefore of greatest interest to most of us. Data is processed in groups of 127 bytes. Each byte of data is transmitted as two bytes, representing the two nybbles (halves) of the data byte. A dollar sign character, for example, which is internally represented as hexadecimal code 24 (decimal 36), will be transmitted as the two characters '2' (hex code 32) and '4' (hex code 34). Since each byte transmitted represents four data bits, only the characters 0 through 9 and A through F are transmitted. Each group of 127 data bytes is thus sent as 254 bytes, followed by a two-byte checksum, making transmitted blocks 256 bytes long. The checksum permits most transmission errors to be detected. Non-standard *ACK* (29) and *NAK* (17) codes are used. Since no block number is sent, it is possible for an entire block to vanish without trace. However, provided the sending and receiving programs operate at the same speed, this method is quite dependable.

Coping With Missing Data: If we have a simple data character error, then our block checksum verification will usually detect it. But what if a burst of noise on the line occurs, so bad that a character effectively vanishes? If one of the 256 characters in a transmitted block fails to arrive, then the receiver could be left hanging, waiting for an event that will never happen. The PET transfer protocol handles this by adding extra characters: each 256-byte data block is trailed by a group of extra 'Z' characters. Likewise, each of the 'ready for next event' codes is repeated several times — just in case the first character doesn't make it through.

This resolves one problem, and creates another. When a data block arrives and is processed, we must be sure the trailing 'Z' characters have also all arrived before we ask for the next block. The same consideration applies to the other extra bytes sent. This can be taken care of by adequate delays (say 1/20 second per character expected) before we flush the input buffer and respond.

Timing — the Critical Issue: Having established a character transmission code (ASCII) to be used, and an error-checking protocol (PET File Transfer, say) to handle mangled or missing bytes and to make clear who should do what and when, what can go wrong?

Timing — poor timing, to be exact. For example, suppose our actual transmission rate is a trifle high. If we use our computer as a dumb terminal, and directly type what is to be sent, we will rarely stress the system. Most people do not type at thirty characters a second. However, an 'intelligent' terminal program sending data for us can drive the modem at full speed for extended periods, and the potential for 'overrunning' our listener becomes real.

We have noted the need for delays, to ensure that all expected characters arrive, and to allow line 'echoes' to die away. Delay length should be fixed after experiment — we are dealing with an inexact science.

Where Does This Leave Us? The world of low-speed (300/1200 baud) asynchronous data communications is a jungle. There are few standards widely accepted. Particularly in the case of file transfers, there are many diverse sets of rules, each in limited use. By gaining some understanding of the essential issues, we greatly increase the chances of success in our attempts to transfer files by phone. □

Important message to all BBS users

TPUG BBS

The telephone number is:

(416) 782-9534

Operating hours:
24 hours per day
7 days per week
The password is . . .

BURGLAR

Marketplace

National Computer
NCR
Repair

- Fully qualified technicians
- All work guaranteed

TPUG Conference Special
1541 drive

- align drive
- Time device
- Clean head
- Install backstop mod. kit

$34.95

NCR
15A Nielson Ave.
St. Catharines, Ont.
(416) 688-6464

KIDS, come to our 3rd annual
SERENDIPITY summer adventure!

The RECREATIONAL COMPUTER CAMPS offer an exciting combination of computer education and good old summer fun!

Call or write today for more information about these day camps and for registration forms: ph 306/955-1377.

SERENDIPITY VENTURES INC., P.O. Box 1944, Saskatoon, Saskatchewan, S7K 3S5, Canada

The FIRST Toronto Electronic Auction

May 24 & 25
College Park, Toronto

Auction of used computer hardware and software. Proceeds to UNICEF African relief.

For further information
Call R.K. Smith (416) 429-4822

TPUG Conference 1985

TPUG's Annual Conference will be held on May 25 and 26 at 252 Bloor Street West, in Toronto (see the ad elsewhere in this issue for further details).

The conference is a unique opportunity to meet and to learn from some of the most renowned experts in Commodore computing. To give you an idea of what's in store, Liz Deal and Keith Falkner preview their presentations on these pages...

Plus/4 and C-16 Character Definitions

by Elizabeth Deal

One of the areas I hope to explore in my session on programming the Plus/4 and C-16 is the problem of redefining characters. This is one of the very few activities on these computers that involves **POKE**ing, but the procedure is much simpler than on the Commodore 64. This article summarizes the steps needed for redefinitions, and shows an all-purpose way to code them.

POKEs are needed to tell the video chip where the characters are. In addition, we must not permit the system to handle errors — unless we like swimming screens. Details are provided in the listing, and also in the text that follows it.

```
Make sure all Basic pointers are correct, set up some colors
   120 graphicclr:color 0,2:color 1,1
Lower the top of memory pointer
   130 poke 55,0:poke 56,48:clr
Define powers of 2
   135 for j=0 to 7:p(j)=2↑(7-j):next j
Define error catcher
   137 trap 200
Define the address of character set
   140 ad=3*4096+4*256
Print something using one defined character %
   145 print" % commodore % "
Switch TED chip to look at RAM and characters at page $34
(35=34+1)
   150 poke dec("ff12"),dec("c0"):poke dec("ff13"),dec("35")
Character number to define is #37=poke code of %
   160 aa=ad+8*37
Now redefine the 8 lines
   170 for j=aa to aa+7:read v$:gosub 230:poke j,v:next j
Wait for user to push any key
   190 getkey i$
Switch TED chip to look at ROM, normal set at page $d0
This is also a trap routine for all errors
   200 poke dec("ff13"),dec("d1"):poke dec("ff12"),dec("c4")
   210 if er>0 then print">"err$(er);el
   220 end
Subroutine which makes non-spaces into ones, spaces into zeros
   230 v=0:for K=0 to 7:v=v-p(K)*(asc(mid$(v$,K+1))<>32)
   235 next K:return
Sample character definition: 8 data lines,8 characters wide
for the famous Commodore-chicken sign
   240 data"  ****  "
   250 data" ** **  "
   260 data"**   ***"
   270 data"**      "
   280 data"**   ***"
   290 data" ** **  "
   300 data"  ****  "
   310 data"        "
```

Do not **RUN** *this yet!* Make sure that lines 150 and 200 have no errors. Then follow this little procedure exactly. It will seem odd, but it is the easiest way to move characters from one place to another in the computer's memory — a move we must make, somehow or other.

Considering that the C-16 has RAM only up to 16K, we put the characters at about 12K ($3000 hex). To protect the characters from being overwritten by the strings, we lower the top-of-memory pointer to where the characters begin. The move itself can be done in several ways; the simplest uses the built-in machine language monitor. Let's do it:

Type **MONITOR** and push **RETURN**. You'll see all sorts of gibberish on the screen. Ignore it. Where the cursor is flashing, type the following line, making sure you have exactly one space between groups of letters and numbers:

```
T D000 D7FF 3000
```

and push **RETURN**. Type letter 'X' and push **RETURN** to get back to BASIC. The job is done. We haven't hooked up the characters yet, but they are now available to us, for any modifications we may wish to make.

Now you can **RUN** the program. You will see a change in characters. Press any key to restore things to normal. This breaks the hook, but the characters can be used again when needed.

Details

We redefine the percent key into a Commodore logo shape, as drawn in the **DATA** lines. The patterns are decoded in a subroutine in line 230. This is an all-purpose subroutine. You can call it again and again, the magic word being **GOSUB** with a line number.

The new characters are active until you press a key (line 190), at which point things are reset to normal. If you wish, you can put a **REM** on line 200 for the characters to stay put for a while, so that you can experiment with them, but be careful — this line is needed, most of the time.

Why? When you get any kind of an error while using defined characters, the screen fills with a fair amount of floating garbage. Do not panic: blindly type **GOTO 200** and press **RETURN**. This will set things back to normal. Alternately, while holding the **STOP** key firmly down, press the tiny little reset button on the side, type 'X' and **RETURN**. Your program should be intact, and it should **LIST** and **RUN** properly.

Where did we get 37? That's the screen code for the '#' character. How do we know the screen code? Look it up in the index of the manual, or print '#' in the first screen position, and underneath type:

```
PRINT PEEK( 12*256)
```

The formula in line 160 tells the computer to put new character values at the beginning of our new character memory, which we placed at hex $3000 or decimal 3*4096 = 12288 plus the character offset. Since each character takes up eight bytes, we multiply the screen code by 8 and zero-in smack on the character set we want, to get the offset.

The character number can be any number from 0 to 127. Don't try using numbers larger than 127 (reverse characters). It won't work.

To switch from the normal character set to the one you want, you must **POKE** certain places in memory. This is done in line 150. Conversely, to disconnect, we restore the computer's normal values (line 200).

We used the machine language monitor to move the characters, as this is the quickest way to move them. It's not very satisfactory in a running program, of course. The alternative is a loop to **PEEK** and **POKE** the characters. It's very slow in BASIC, and **PEEK**ing ROM needs a trick:

```
POKE 1176,44:V=PEEK( some
address):POKE 1176,141
```

You can place all sorts of statements between the two **POKE**s, as long as they do not involve any character strings.

Error Trapping

An error on our part normally would cause an error message to be neatly printed on the screen. But this is different. When there are errors, the computer gets thoroughly confused and presents you with a live, jittery mess on the screen. We can't prevent all the errors, but we can catch most: **TRAP200** in line 140 should trap many typing mistakes. When it happens, instead of being at the computer's mercy (trash on the screen), we go to line 200, which restores the normal environment. In line 210 we print our own error message, preceding it with the '>' character.

Needless to say, if line 200 is mistyped, all this is in vain. You can't trap a trap.

ER is an error number that the computer detected. If zero, we have no error. If minus one, we also have no error. Careful here — you must code **IF ER>0** to be able to pick up the entire message **ERR$(ER)**. It won't work when you code **IF ER THEN**... Sorry about that. It's rather peculiar, I admit. □

An RS 232 for the VIC 20 and C-64

by Keith Falkner

My presentation at this year's TPUG Conference will show you how to construct and program a usable RS 232 port with a minimum of parts. We cheat a little on the voltages, but it works and it's safe.

Commodore provides little information about the RS 232 port. *The Commodore 64 User's Guide* doesn't mention it at all, and *The Commodore 64 Programmer's Reference Guide* omits some vital details. This is a real pity, because there are very many RS 232 peripherals that our computers could use if only the RS 232 port were better understood. For instance, I am typing this on an Apple Macintosh, and I will send it to my Commodore 64's RS 232 port so that I can send the text to *TPUG Magazine* on disk. I can instead use an RS 232 modem or a printer.

You've probably seen a genuine RS 232 device. They usually have DB-25 connectors, which have two rows of holes (or pins), one row of thirteen and one row of twelve. This looks nothing like a Commodore User Port, with its 24-pin edge-connector. Another difference that you absolutely must deal with is the voltage hassle. Our computers produce or detect signals of zero or five volts; RS 232 devices accept or deliver approximately +12 volts or -12 volts. Actually, some use up to 25 volts.

Fortunately, all the hardware hassles can be solved with fifteen dollars' worth of common parts: two connectors, one chip, and a pair of resistors. You can build a simple adapter in a cassette box, put an edge-connector on one end and a DB-25 socket on the other, and have a plug-in adapter that does not require modification to your computer. Full details of this plug-in adapter, including the necessary cables to connect to a printer or modem, are available in a seven-page article from TPUG. If you are not planning to attend the conference, but you want this information, please send one dollar and a self-addressed envelope to the club and ask for the 'RS 232 Port Article'.

Programming an RS 232 device is really simple, but again there is a hassle. You must **OPEN** the RS 232 file first, because BASIC must take two 256-byte areas of memory to handle traffic to and from the device, and it destroys your variables and arrays to do this (with a **CLR**). □

Fake Flight Sims Grounded

by Ken Cox

Owners of a Toronto Commodore computer dealership are facing criminal fraud charges following a five month investigation by the Royal Canadian Mounted Police into 6000 bogus copies of SubLOGIC Inc.'s software hit, **Flight Simulator II**.

"It's the first time, as far as I know, that a charge of this nature has been laid, where they have actually gone ahead and duplicated not only the diskette, but the manuals, the box, and even the warranty card," said an RCMP investigator, who asked not to be named. "This is the largest scale that has ever been seen in this office. It's a case where it wasn't just copying, it was outright counterfeiting."

Bootlegs of the aircraft simulation were sold for 25 dollars wholesale and up to 60 dollars retail across Canada and northern New York state.

The complaint originated with **Flight Simulator II**'s manufacturer, SubLOGIC Inc., in Champaign, Illinois. Company official Bill Voss told *TPUG Magazine* that Canadian distributors had complained that competitors were getting the product cheaper. He came to Toronto and found counterfeits in the stores.

"When I first looked at them it was quite difficult for me to be a hundred per cent sure that they weren't ours. Items like that exist in the videotape and record industry, but I believe this may be the first actual counterfeiting of software," Voss said. "When you're talking about imitation being the sincerest form of flattery, we've been very flattered here. But it has been in a less than nice way."

The quality also surprised Bruce Hampson, business manager of the Canadian Computer Dealer Association.

"To my knowledge there has never been another case of exact duplicating or counterfeiting in the world," Hampson said in an interview.

Mark and Harold Herzog of House of Computers Inc., and Stephen Weisbrod and Harold Taylor of Syrograph International Inc., are charged with conspiracy to commit fraud.

The commercial aspect of program copying has become the RCMP's 'priority' according to the RCMP source. "If somebody is trading them, there is very little under the Copyright Act that you can do. You can't really charge them with fraud, because there is no material gain. (But) if there is a material gain, or if it prejudices the company to any great extent", a charge will be laid.

Hampson agreed that police should concentrate on those who reproduce and sell entire packages. "In counterfeiting, they are taking over the distribution network that the legitimate manufacturer has, and substituting their product."

Most of the 6000 packages are in the hands of computer owners. The RCMP was able to recover only about three to five hundred of the counterfeit programs.

According to SubLOGIC's Voss, his company has "probably exceeded 200,000" in total sales of **Flight Simulator II** for the Commodore 64, and "approaching half a million" for all translations.

The sale of illegitimate software, said the RCMP source, "is getting a little out of hand. You can easily go out and buy yourself a copying program. There is, unfortunately, nothing that can be done against them. We were looking at the possibility of trying to come up with 'manufacturing burglar's tools', but you can't do that to a person who makes crowbars either."

Is it or isn't it? Counterfeit copies of SubLOGIC's ***Flight Simulator II*** *are virtually indistinguishable from the real thing.*

The Canadian Computer Dealer Association is worried about so-called Software Evaluation clubs, which sell 25 dollar memberships. Club members pay a 'service fee', typically 10 dollars, to get a copy of a commercial program minus the protection. "They give it to you to take home to evaluate. You are supposed to play with it until you are happy that it is what you want and then you destroy it, go to a legitimate dealer and buy a legitimate copy. Of course, there's no follow-up in this, and no obligation on your part, so you keep the pirated copy," Hampson said.

On a less commercial scale, computer dealers and software companies are suspicious of many users' groups.

"Many advocate and promote trading of software", Hampson charged. "One fellow buys a program and breaks the security on it. Each month when they meet, they each get another ten programs."

Then there are companies that buy one program and distribute cost-free within the organization.

"We believe that one out of every ten pieces of software in existence is legitimate. When 90 per cent of all the software in use is illegal, then something drastic has to be done," Hampson said.

Hampson also reports that the anti-piracy battle has become downright ugly. So-called 'vigilantes' befriend pirates at user group meetings and get invited to their homes. "When the hacker leaves the house, they break in and erase everything the hacker has, whether it is legitimate or not. What they're doing is breaking the law, but they are sending a scare through the American hackers."

RCMP investigations into software pirates have recently intensified. The police source for this story is "the resident hacker in the RCMP office. I am being utilized to the office's benefit in approaching these people. I can speak a lot of the language."

Bill Voss of SubLOGIC praised the RCMP for their interest in the **Flight Simulator II** case. "I came in with a computer problem and there just happened to be a constable who was a home computer buff."

One of the difficulties is antiquated legislation. "The penalty section of the Copyright Act at the present time allows a 10 dollars per copy maximum fine, to a total of 200 dollars per charge," the policeman said. Counterfeiters "would gladly plead guilty and leave laughing".□

The Victim and The Disk

by Malcolm O'Brien

Warning: The following reading material contains explicit descriptions of disastrous disk errors and is not for the squeamish or weak of heart! Reader discretion is advised ...

What evil lurks in the hearts of 1541s? Not even the Shadow knows. There are several common horror stories retold time and again in hushed whispers by users from Alaska to Zanzibar. Tales of files banished to an uncharted Mylar Twilight Zone, never to be accessed again; of programs viciously decimated by the infamous Save with Replace; of blocks missing and presumed purged after validating; and, most common of all, heads that go out of alignment (what *are* they looking for?).

Not pretty pictures! Maybe you've even lost pretty pictures. We have all read of (or experienced!) such strange and distressing occurrences with these insidious devices. Tales of woe are all too many and explanations or solutions all too few.

Personally, I have experienced such heart-wrenching agonies only twice. Both cases seemed to confirm the hypothesis that the file you lose is the one that is most important to you. And in both cases I lost programs that I had been contracted to write. Losing many hours of work is bad enough, but when they're written for someone who wishes he had the program three months ago it's even worse. Because of their value, I spent some time doing detective work, and I found some things that may prove to be informative and helpful.

In the first case, I was writing a program to track a stock portfolio. I had written about seventeen blocks worth of code to create and maintain the required files. I went across town to show my customer what I'd done and to get more information from him as to what manipulations of the data he wanted the program to perform.

Imagine my surprise when, after loading the program, I got the READY prompt almost immediately! "No way!", I said, "It's seventeen blocks long!" I listed the program: it consisted of one **REM** statement! Needless to say, my customer was duly unimpressed. I wilted severely. What could have happened?

I recognized the **REM** statement. I had saved several of them, each the name of a routine that needed to be written or that I thought I might need. In effect I was using the directory as a scratchpad to prompt me to remember the items that still needed doing. But how in the name of all that's serial did I get 'ROI' (Return On Investment — a one block file) when I'd typed in **LOAD"STOCK",8** (a seventeen block file)? It didn't make sense.

My other dreadful experience happened to me while I was working on a sales tracking program...

Finally I decided that only one thing could have caused this error — and I had to find out what it was.

The first step in my investigative mission was to get a second opinion — and a third, and a fourth. I knew I was onto something when I got the same response from everybody. They shrugged their shoulders and said, "I dunno."

I'd spent about fifty hours on this program and wasn't about to let it go! It was on that disk somewhere and I was determined to find it. Desperate, I contacted the eminent Dr. David Bradley, renowned sleuth and intimate friend of Mr. Sherlock Holmes. David said, "Did you run **Diskmap** on it?" In a flash, I responded "**Diskmap**?"

Bradley informed me that **Diskmap** is a program in TPUG's C-64 software library, on disk (C)T9. It will give an accounting of every block on a disk, telling you which blocks are allocated, and to which files. It was very helpful to me in this case and I recommend it.

Dr. Bradley and I retired to the gentlemen's computing quarters and set to work. We ran **Diskmap** on the wretched floppy and scrutinized the printout carefully, looking for clues. The key to unlocking this case was the curious fact that a single block had been allocated to two different files. "That's not supposed to happen", muttered Bradley. "That's nice to know", said I.

Continuing my investigations, I went home and loaded **Diskview**, another invaluable TPUG program. It has appeared most recently as **Diskview 3** on (C)M9. I figured that although the first block of my program had been overwritten, the other sixteen were probably still intact on the disk — somewhere. I looked over the **Diskmap** printout, hoping to find a pattern to the block assignments. I took some 'educated' guesses as to the location of the track and sector of the next block and looked at their ASCII representations. Whenever I found something that looked like my program I traced blocks. After I'd found all 16 blocks I told the negligent BAM that these blocks were allocated to my program and changed the numbers for the first track and sector in the directory. So, by 8 o'clock the next morning, I had my program back!

What had gone wrong? I remember saving that **REM** statement and I think that I had performed some operations on another disk immediately before. My suspicion is that the drive didn't realize that I'd changed disks and that it was still referring to the BAM of the other disk. The solution? *Always initialize the disk before performing a write operation!* It only takes a moment, and it's a moment well spent if it spares you the heartbreak of an overwritten program.

My other dreadful experience happened to me while I was working on a sales

NEW FOR HIGH SCHOOL ADMINISTRATORS

IF A STUDENT WANTS TO CHANGE HIS TIMETABLE . . . CAN YOU DO IT?

YES YOU CAN!

The WYCOR Class Scheduling System lets you:

- Add new students, change existing timetables.
- Checks all available classes, class sizes.
- Displays 32 best timetables that minimize class sizes.
- Lets YOU pick the timetable.
- Prints the new timetable.
- Updates class size.
- Prepares a teachers change list.
- Other reports avaliable.

WYCOR BUSINESS SYSTEMS
170 The Donway West, Suite 401
Toronto, Canada M3C 2G3
Tel. (416) 444-3492

C 64
PROVINCIAL PAYROLL

A complete Canadian Payroll System for Small Business.

• 50 Employees per disk (1541) • Calculate and Print Journals • Print Cheques • Calculate submissions summary for Revenue Canada • Accumulates data and prints T-4s • Also available for 4032 and 8032 Commodore Computers.

Available from your Commodore Dealer.

Distributed by:

MICROCOMPUTER SOLUTIONS
1262 DON MILLS RD. STE. 4
DON MILLS, ONTARIO M3B 2W7
TEL: (416) 447-4811

ATTENTION COMMODORE 64 OWNERS DID YOU BUY THE WRONG PRODUCT?

WE'LL PAY YOU FOR YOUR MISTAKE!*

PRINTER INTERFACE BLUES

No graphics, doesn't work with your software, Bad aspect ratios, no available buffer, well you wouldn't have these problems with the **Micro-World M W-350.** We'll give you $59. off the list price of $129. for that strange interface that's causing you trouble.

LAST YEARS BACK UP SOFTWARE

Everyone has Back-up software that reproduces errors, but will it back up non-standard sectors, reproduce density frequency alterations alter the number of sectors, copy single sync bits, and reformat a single track? We don't think so. Send your antique back and recieve $25. credit toward the "New Revised Clone Machine" at $49.95. We've added an MSD dual drive Clone Machine also available for only $39.95. Upgrade your products to the latest state of the art today.

Other software products available from Micro-W include: Mr. Tester diagnostic software, Fantastic Filer data base and report generator, Screen Dumper 64, Font Factory/Sign writer for custom type and Jot-A-Word educational software, watch for our $49MIDI interface that will connect your Commodore 64 to musical instruments.

CALL - 201 - 838-9027
or write us at

Micro-W. DISTRIBUTING, INC
1342B Route 23
Butler, N.J. 07405

VISA MasterCard

Dealer Dist. Inquires

*NOTE Micro W reserves the right to cancel this offer at any time without notice

tracking program. A list of the products being sold was the culprit this time, and it was several blocks long. Once again, of all the files that could have been clobbered, it had to be the one that I hadn't backed up. There were several other files on the disk that never would have been missed but my 1541 (alias *Jaws*) had to overwrite the longest and most complex program I've written to date. But this time I know exactly when and how it happened.

I was working on a program to maintain the SEQ files that the sales program used. I selected the 'Put file to disk' option from the menu, expecting to encounter a **STOP** command that would end the program. I was forgetting that I had already written the code for that option. The fire in *Jaws'* eye lit up and my program was gone. What went wrong? I had mistakenly opened the file to read, which should have meant that attempting to write to the file would result in an error message, but no transfer of data when the subsequent **PRINT#** statements were executed. Well, somehow or other those **PRINT#** statements worked! Each record in my file was written out onto the disk just as nice as you please — over the most important program I'd ever written. *Jaws* strikes again. Just when you thought it was safe to go back into the DOS.

There are several morals to this story:

- Ensure that all your disks have unique IDs, and *don't* change a disk's ID.
- Make sure that you open your files to write if you use **PRINT#**.
- *Always* send an initialize command to the drive before performing a write operation.

This article would not be complete if it failed to discuss Save with Replace. I have used the little snake, '@', more times than I care to remember and it has always worked properly for me. After both of the events described above people asked me if I'd used Save with Replace. I hadn't. The single **REM** statement was a regular save, and the other problem wasn't a save at all! Lou Sander is doing an in-depth study on Save with Replace, and I'm sure that we'll all be very interested to see what his conclusions are. Until then I suppose we'll all live in fear and sleep with a nightlight. □

Save-With-Replace: At Last, The Real Rumour

by Malcolm O'Brien

By now you're probably wondering what the truth is about the save-with-replace bug. Well, you're not alone. Information on this bug so far amounts to little more than rumour, hearsay and speculation. As I state across the page, save-with-replace has always worked for me — but I have stopped using it.

The classic bug, for those who have never met it, goes like this: You load a program (**LOAD "PROGRAM A",8**), make some changes, then save it with the '@' replace function (**SAVE "@0:PROGRAM A",8**). At this point, everything is normal — or seems to be. The surprise comes later on, when you load another program (**LOAD "PROGRAM B",8**) and get — to your shock, disappointment, chagrin, confusion and dismay — the revised version of **Program A**. At this point, **Program B**, which was the longest and most valuable program you had ever written, is either very difficult to reconstruct or completely destroyed.

The save-with-replace bug has been dismissed as a myth by many prominent authorities. Part of the problem is that even those who believe in the reality of the bug are in disagreement as to which disk drives are subject to it. As one might expect, though, the 1541 drive is the prime candidate. Another difficulty is that no one has yet come forward with a really convincing explanation of how the bug might be caused, despite intensive scrutiny of the relevant DOS routines. A third and related difficulty is that no one has ever been able to produce a routine with which the bug can be reliably demonstrated.

Until now. As revealed in the latest issue of the highly-regarded magazine *The Transactor*, Charles H. Whittern, of Hudson, Michigan has devised a short program with which the save-with-replace bug can be easily induced. Readers who wish to see the actual listing are referred to *The Transactor*; here it need only be said that the program operates in the simplest way imaginable, by repeatedly saving short test files using the dynamic keyboard technique. After a short time, on the order of a few minutes, one of the test files will prove to have the wrong data.

In an effort to determine the significance of this new information, *TPUG Magazine* asked some well-known users to share with our readers their knowledge of and experience with save-with-replace. Now we can boldly stand up and add to the rumour, hearsay and speculation. What follows are the comments of our expert panel:

Prime Commodorian Jim Butterfield: "The important thing, if the bug *is* real, is to understand it to the point where it's manageable. It seems that now we can at last prove that it really does exist, and reproduce it. That's a good first step to figuring out how it works..."

***Star Trekking* programmer Dave Neale:** "I had a lot of problems with it when I used files that all started with the same four or five letters followed by a 1, 2, etc. I had fewer, once I started putting the numbers in front of the filename. Now I don't use it at all. I have a line in each BASIC program that scratches the original file, then saves and verifies it. That's the only method I use to save BASIC now. I think, though, that the problem is a combination of the 1541 and the media. This would explain why the bug has been so elusive; also — and I want to stress this — it seems to happen more as the disk gets older. Be sure to make backups. I save everything onto four separate disks. **Star Trekking** is on seven disks."

Karl Hildon, editor of *The Transactor*: "Basically, I thought I had some problems with it, but when I looked at the (1541 ROM source) code, I thought it had to be something else causing the problem. It *still* has to be something else, because the code is about as straightforward as it comes. One of my less favourite theories is that it's unit-dependent." □

Micro Processes

Where Does It All End?

by Paul Blair

Copyright © Paul Blair 1984

It happens to all of us at some stage or another, I suppose. This time, it happened to me.

I messed up a disk. Badly. No problem, though — get the backup out and recover the situation. Ah! The backup went to Zanzibar the other day with something else on it, because I was short of disks. So I decided to rebuild the wreckage (I really didn't have any option . . .)

What I needed was a routine to provide me with an audit trail of the sectors of each program in order of appearance. If I had that, I could reconstruct the chains and recover as much as possible.

Informed readers will know that each disk sector contains 256 bytes of storage. The first two bytes hold the so-called 'chain bytes' — the track and sector numbers of the next block in the file. Using these two bytes, Commodore computers can string storage together in any quantity required.

So this routine was born. With it, you enter the track and sector where you want the audit trail to begin, and it beavers away, reading until it finds the end of the chain. Here's how:

```
100 REM: TRACK/SECTOR AUDIT TRAIL
110 REM: ANY COMMODORE DOS2 DISK DRIV
    E
120 REM: PAUL BLAIR
130 REM: LINE 210 FOR C-64 ONLY
140 REM:
150 GOTO200
160 :
```

Put the error routine here . . .

```
170 INPUT#15,EN,EM$,ET,ES:IFEN=0THEN
    RETURN
180 CLOSE4:CLOSE15:PRINT"<2 DOWN>
    <RVS>DISK ERROR<OFF>";EN;EM$;ET;E
    S:END
190 :
```

Now the program proper . . .

```
200 PRINT"<CLR><10 SPACES><BLU>PROGRA
    M TRACE"
210 M=53280:POKEM,1:POKEM+1,1
```

Get the starting track/sector, even if it's a guess . . .

```
220 PRINT"<DOWN><BLK><6 SPACES>
    WHERE SHOULD TRACE BEGIN":INPUT"
    <DOWN>TRACK";TK
230 INPUT"<DOWN>SECTOR";SC:PRINT:GOTO
    300
```

Open the error channel, plus a direct access channel . . .

```
240 U=8:OPEN15,U,15,"I0":OPEN5,U,5,"#
    ":GOSUB170
```

Read in the chosen block with a direct access command, **U1**:

```
250 PRINT#15,"U1";5;0;TK;SC:GOSUB170
```

Scan the first two bytes from the buffer where the **U1** command stored them. If the first byte is zero, or greater than the maximum number of tracks, 35, on a normal disk, you have found the last sector (line 270) . . .

```
260 GET#5,IN$:IFIN$=""THENIN$=CHR$(0)
270 TK=ASC(IN$):IFTK=0ORTK>35THEN340
280 GET#5,IN$:IFIN$=""THENIN$=CHR$(0)
290 SC=ASC(IN$):CLOSE5:CLOSE15
```

Format the values to two characters each for tidy output . . .

```
300 TK$="T"+RIGHT$(STR$(100+TK),2)
310 SC$="S"+RIGHT$(STR$(100+SC),2)
320 PRINTTK$":"SC$"<3 SPACES>";
330 XX=XX+1:GOTO240:REM KEEP COUNT
340 CLOSE5:CLOSE15:PRINT
350 PRINT"<DOWN><BLU>"XX"BLOCKS COUNT
    ED<DOWN>"
360 :
```

And see if there is more work to be done . . .

```
370 PRINT"<BLK>PRESS F1 FOR MORE"
    CHR$(13)"PRESS F3 TO END"
380 GETY$:IFY$=""THEN380
390 IFY$=CHR$(133)THENRUN
400 IFY$=CHR$(134)THENEND
410 GOTO380*
```

Printer output could be included quite easily if required. A favourite trick goes like this:

Chop **GOTO300** from the end of line 230. Put in these lines instead:

```
231 DV=3:INPUT"<DOWN>HARD COPY (Y/N)"
    ;AN$
232 IF ASC(AN$)=89THENDV=4:REM YES
233 OPEN 4,DV:GOTO300
```

Then, change **PRINT** to **PRINT#4** in lines 320 and 350, and add **CLOSE 4** to line 340.

Yes, I recovered the disk. It took a while, but was worth it. With better management, you should only ever have to use this for fun or sleuthing. □

C-64 Datacheck

by Chris Johnson

There are many programs that convert sections of memory into **DATA** statements that can be poked back by a BASIC loader. This is an easy way of incorporating sprite information or machine language routines into a BASIC program.

This routine differs from most in that it provides a checksum *at the end of every line*. When you run the BASIC loader this program creates, any error will be caught and you will be told which line the error is in.

Type in this program and **SAVE** it *before* running it — it erases itself when it's finished, leaving you with only the BASIC loader. The **DATA** statement line numbers show the address of the first piece of **DATA** in the line, unless that would conflict with the line numbers of the program (less than 14); or unless it is higher than BASIC line numbering allows (the upper limit is 63999). □

```
0 print"<clr><2 down> self-checking d
  ata statement generator<10 spaces>
  <down>- by chris johnson - <2 down>
  "
1 input"start at";b:input"<down>
  <2 spaces>end at";f: i=b:l=b:ifb<14
  orf>=64000thenl=14
2 print"<clr>10fori="b"to i+"f-b"step
  8":print"b="b"<left>:f="f"<left>:i=
  "i"<left>:l="l"<left>:g04"
3 poke631,19:poke632,13:poke633,13:
  poke198,3:stop
4 print"<clr>";:for K = 1 to 8:poke 6
  31+K,13:if i > f then nextK:goto6
5 printl"data ";:forj=0to7:pK=peek(i+
  j):c=c+pK:printpK"<left>,";:nextj:
  printc:i=i+8:l=l+8:c=0:nextK
6 print"b="b"<left>:i="i"<left>:f="f"
  :l="l"<left>:g04";:ifi+j>f+8then
  print"<left>8"
7 poke198,10:poke 631,19:poke640,13:
  stop
8 print"<clr><2 down>":fori=0to9:poke
  630+i,13:printi:next:poke198,10:
  print"<home>":end
9 :
10 :
11 forj=0to7:reada:poke(i+j),a:c=c+a:
   nextj:read cs
12 ifc<>csthenprint"<2 down>Error in
   <space>line";i:fori=1to25:a=abs(a-
   15):poke54296,a:next:stop
13 c=0:nexti
```

Using **PRINT USING**

by Sean Rooney

One nice feature of the Plus/4 and C-16's BASIC 3.5 is the **PRINT USING** command for formatting output. These commands are useful for working with the printer, as well as with the CRT. For printing to the screen, the command looks like this:

```
110 print using "## ###.###";a,b
```

The number signs (#) in the command indicate the number of places to be printed before and after the decimal point. The number is padded with zeros to the left and right as needed, or truncated to the required length. Any character that is neither a number sign nor a decimal point indicates the end of the format string for a particular number.

Here is a little program with **PRINT USING**:

```
1 for a=1 to 5
2 print using "## ##.###";a,a*a
3 next a
```

The output looks like this:

```
 1  1.000
 2  4.000
 3  9.000
 4 16.000
 5 25.000
```

The number signs can be included in any string:

```
1 a$="i am ## years old and my brothe
  r is ## years old"
2 for i=1 to 2: read a,b
3 print using a$;a,b: next i
5 :
6 data 14,23
7 data 5,9
```

Here's the output:

```
i am 14 years old and my brother is 2
3 years old
i am  5 years old and my brother is
9 years old
```

So that's how you use **PRINT USING** to format your output to the screen. And if you want a hardcopy? Maybe you've guessed it... the command is **PRINT# USING**.

```
1 read a,b
2 open 1,4,7
3 print#1, using "##.##<3 spaces>##.#
  #";a,b
4 close1
5 :
6 data 11,89.4,48.2,8,99.01
7 data 13,9.41,9,7,0
```

This time the output goes to the printer:

```
11.00    89.40
48.20     8.00
99.01    13.00
 9.41     9.00
 7.00     0.00
```

You should get acquainted with **PRINT USING** and **PRINT# USING** if your machine supports them. When it comes to formatting your output, they can make life a lot easier. □

Custom PET/CBM Start-Up Messages

by Ian A. Wright

There is often a need to identify a particular microcomputer (or a number of them) as "The Property of ... " to reduce the chance of theft, or because it is required for insurance identification. Metal plates, spray-painted logos and inscribed identification have all been tried by individuals and businesses to thwart those who wish to acquire a microcomputer without

paying for it. However, paint can be removed, plates can be pulled off, and the scribing can be filled or covered. None of these methods are totally foolproof, although they do make theft much more difficult.

Domenic DiFrancesco, of COMSPEC Communications in Toronto, has come up with an exciting way to identify your machine(s) that uses the ability of the computer to protect itself. This new alternative does not deface the unit and is almost impossible to remove — a custom screen message that is burnt into the machine's D-ROM. Each time the machine is turned on, it could say, for example:

*****COMMODORE BASIC 4.0*****
Property of Ian A. Wright
31746 BYTES FREE
READY.

A computer that publishes its owner's name whenever it is turned on is a difficult machine to fence! Up to 256 characters of your choice can be inserted into PET/CBM machines (also into the SuperPET, but not without some service work). You can have a 'Hoser' or 'Punk' machine, if that's what you want. You can easily insert the new ROM into machines that do not have soldered ROMs yourself but, if they are soldered in, the machine must go into the service department for a few days. □

Ye Olde Pette 80 — It Already Exists

by John R. Kurczak

After reading the article by Tom Bartoffy in the February issue, I have good news to report to 2001, 9-inch screen PET owners. I have been using an 80 column board, which is available for this PET from Microcomputer Services in England, for almost a year. An 80 to 40 column switch is available to provide both modes of operation — for 40 column graphics and for 80 column wordprocessing. The board is about 4 inches by 7 inches in size, and plugs into the 'E' ROM socket, leaving room to access the two empty ROM sockets.

With this board the CBM computer will have all the functions of an 8032: 80 column screen width, screen window facility, TAB functions, Escape key, Repeat key, 15 screen editing commands, automatic line end indication (with optional piezo buzzer or CB2 sound box), a pause facility during program listing, and special ROM routines to provide repeat on all keys.

In addition to these commands, the Microport 80 column board has the capability to toggle between two character generators — by installing a 4K ROM to provide the standard CBM character set and a medium resolution graphics character set.

The diagrams and instructions provided with this board make it very easy to install. No special soldering is required. The following are the modifications required to install the board:

- Make the keyboard 'SHIFT-LOCK' key into an ordinary push type key, which now serves as the 'control' key.
- Break link 'P'.
- Remove 'E' ROM to plug into the 80 column board.
- Fit various connectors to their proper locations.
- Fit the 40-80 column switching unit.

Of these changes, the keyboard modification takes up the most time. The board should take about one to two hours to install.

I am very pleased with this 80 column board, and have found complete compatibility with 8032 software, including **WordPro 4 Plus**, **Visicalc**, **The Manager** and the **Petspeed** compiler. If you are using **Paperclip**, there is no need to upgrade your word processor as it works in both the 80 and the 40 column modes. **COMAL 80** is a delight to use with 80 columns. After using the 80 column mode for some time, I found that the characters in the 40 column mode were too coarse and large. Now I rarely switch to 40 columns except for games.

The cost of this board is 125 pounds sterling. The present exchange rate for the pound is decreasing so you can get a good price on the board. The 80 column board can be ordered from: Microport, 7 Clydesdale Close, Borehamwood, Herts., WD6 2SD England, telephone 01-953-8385.

By the way, I have just received a 64K conversion kit that makes my Olde Pette into a CBM 8096. Drop a line to the magazine if you would like to see this product described in a future issue. □

Disabling VIC 20 Memory Expansion

by Neil Phillips

When you first bought your VIC 20, chances are you weren't aware of the trouble of adding extra RAM. When more than 3K is added, the VIC shifts screen memory from its default location.

This can cause problems. Most commercial programs written for the unexpanded VIC will work *only* if there is no memory added. With extra RAM in place, all the **PEEK**s and **POKE**s will be to the wrong location, and your computer will 'hang up' on you.

So you say it's no problem — just remove the expansion cartridge and all your troubles will disappear! Well, not quite *all* of them. If you have a large collection of programs that will work only on the unexpanded VIC, yet also make frequent use of your expansion unit, you will find yourself constantly having to unplug it. This is not only tiresome, but wears the contacts on both the computer and the cartridge. Too much wear may render them useless, and lead you to expensive repairs.

Fortunately, there's a better way. The following little program will give you the best of both worlds. Simply run the program, and any expansion plugged in will be cancelled. The VIC will respond with the cold start message, but now showing '3583 BYTES FREE'. If you wish to get your expansion back, simply type **SYS 64802**. This will completely reset your computer to its proper state.

```
10 FORA=1TO27:READB:POKE8191+A,B:NEXT
20 SYS8192
30 DATA 169,0,141,129,2,141,131,2,169
   ,16
40 DATA 141,130,2,169,30,141,132,2
50 DATA 141,136,2,32,24,229,108,0,192
```

Now, any program (at least, any program I have yet tried) can be run without ever having to tug at the back of your VIC. □

A Yen for a Different 64

by Ken Cox

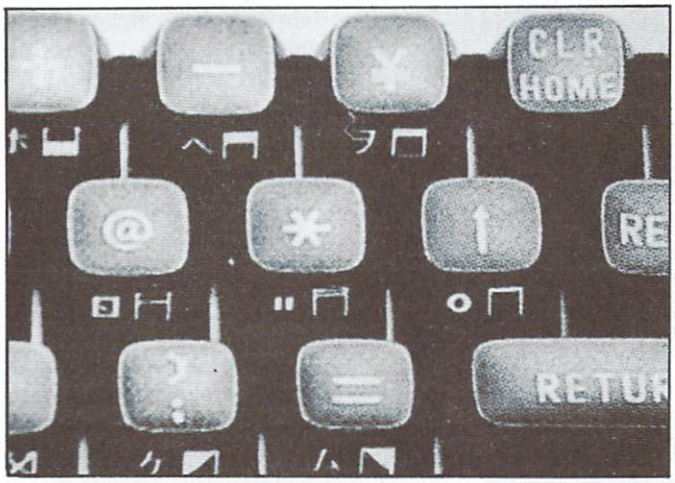
Recently, a friend of mine returned from a visit to Japan with a magazine that most of us probably have not seen. It is called *VIC! The Magazine For Computer Age.*

Inside the back cover was a glossy ad for the Commodore 64. While staring at the picture of the computer, I felt something was odd. Sure enough, after a while I noticed a 'yen' symbol in place of the British pound sign. An even closer inspection revealed that the left-side graphics characters (the ones you get with the logo key) were not graphics at all. They were Japanese characters.

Remember the touted Max Machine that never appeared here? It is advertised inside the front cover and there are program listings for it.

The cover story features the Commodore 64, including the VIC II and SID chips, software and peripherals. The article resembles a manual as it explains the computer's architecture in Japanese.

Some things, like Jim Butterfield's memory maps, are univer-



Notice anything unusual about this keyboard? The picture, from a Japanese Commodore magazine, shows the yen sign instead of the British pound, and Japanese characters instead of the graphics on the left side of the keys.

sal and international. They take up nine pages, complete with some annotations in Japanese.

Computer users who are upgrading from a VIC or Max to the 64, are given step-by-step directions for replacing the ROMs in a 1515 printer to make it a 1525, and to turn a 1540 drive into a 1541.

The magazine listings include a calendar generator, a sprite demo called **Jumping Tomato**, *Yesterday* by the Beatles, and a Commodore 64 organ. All the programs are in BASIC, but some employ machine language routines. Although the BASIC keywords are English, some of the **REM** statements contain Japanese.

An advertisement puts the price of the 64 higher than you might expect: 99,800 yen ($520 Cdn.) For a 1541 disk drive you can expect to pay 79,800 yen ($416 Cdn.) □

To satisfy the demand for our high quality disk games and cassettes, we're introducing:

MASTERTRONIC'S MAILORDERMANIA!

Look at these spectacular prices now available through our mail order department ... and it's so simple to order:

You select from our product list:

Arcade Action		
Space Walk	C64 Disc/Cass.	$9.99
BMX Racer	C64 Disc/Cass.	$9.99
Chiller	C64 Disc/Cass.	$9.99
City Fighter	C64 Disc/Cass.	$9.99
Duck Shoot	C64 Disc/Cass.	$9.99
Orbitron	C64 Disc/Cass.	$9.99
Squirm	C64 Disc/Cass.	$9.99
Kikstart	C64 Disc	$9.99
Munchmania	C64 Cass.	$9.99
Bionic Granny	C64 Cass.	$9.99
3D Maze	Vic 20	$7.99
Duck Shoot	Vic 20	$7.99
New York Blitz	Vic 20	$7.99
Bullet	Vic 20	$7.99
Undermine	Vic 20	$7.99
Neutron Zapper	Vic 20	$7.99
Rockman	Vic 20	$7.99
Adventure		
Quest for the Holy Grail	C64 Disc	$12.99
Educational		
Count with Oliver	C64 Disc	$12.99
Look Sharp	C64 Disc	$12.99
Utilities		
Games Creator	C64 Disc/Cass.	$19.99

Arcade Action		
Big Mac	C64 Disc	$9.99
Challenger	C64 Disc	$9.99
Starace	C64 Disc	$9.99
Pigs in Space	C64 Disc	$9.99
Candidate	C64 Disc	$9.99
Mind Control	C64 Disc	$9.99
Dark Star	C64 Disc	$9.99
Magic Carpet	C64 Disc	$9.99
1985	C64 Disc	$9.99
Vegas Jackpot	C64 Disc	$9.99
Vegas Jackpot	Vic 20	$7.99
Doodle Bag	Vic 20	$7.99
R.I.P.	Vic 20	$7.99
Sub Hunt	Vic 20	$7.99
Phantom Attack	Vic 20	$7.99
Psycho Shopper	Vic 20	$7.99
Adventure		
Se-Kaa of Assia	C64 Disc/ Cass.	$12.99
Educational		
Make Music with Mistertronic	C64 Disc	$12.99
Quick Thinking	C64 Disc	$12.99
Utilities		
Games Designer	Vic 20	$12.99

Order 2 or more, and receive a **free** *19 x 25 Mastertronic Poster/Calendar!*

You mail your order to:

Pearl Direct Marketing Corp.
60 Bullock Drive,
Markham, Ontario L3P 3P2

Plus $2.00 postage & handling
Visa & Mastercard accepted
(Ontario residents add 7% retail sales tax)

You receive your exciting Mastertronic software by **prompt** *return mail,* **plus** *a free catalogue of all our products.*

For further information call us at (416) 471-5858

Library Additions

TPUG's library of public domain software grows month by month. Hundreds of disks containing thousands of programs are available to TPUG members at the nominal cost of ten dollars per disk. Considering that each disk is packed with good programs, at today's software prices this is a fantastic value.

In order for the library to keep growing, our librarians need a constant supply of new programs. If you have written a program or a collection of programs that you think might be an asset to the library, please send it to: TPUG Program Library, 1912A Avenue Road, Suite 1, Toronto, Ontario M5M 4A1, Canada. If your contribution is accepted you will be sent the library disk of your choice. If, for some reason, your contribution is not needed, your original disk will be returned to you.

On these pages our librarians describe recent additions to the library.

Commodore 64 March Disk: (C)TH

The March disk contains a wonderful terminal program, a great mortgage calculator, a program to help your bowling league keep track of its money, a great space invaders-type game, an amazing disk utility program, and a 64 version of the very first game that I ever played on the PET years ago, **Artillery**.

If you are wondering why the disk appears to be quite empty, it is because the terminal program (called **Firstterm 3**) has a manual for the program included on the disk. All you have to do is print it out. The disk utility program also has a manual included. The other programs on the disk have instructions included in a couple of files written by me. All in all, this is without a doubt the best-documented monthly disk in the history of the club. The way I look at it — if you can't use it, it is no bargain. I hope you all agree with me, but if you don't please write to me c/o the TPUG office.

Rumours About What You Will Be Seeing In The Near Future: Speaking of new things destined for the library, be on the lookout for a wonderful directory utility program that should be appearing on the (C)TI disk (next month). It is not a public domain program — it was sent in to the Freeware Library. If you find the program half as useful as I do, you will gladly send Mike Embry (the author) the small amount that he requests. Of course, be sure to read over the instructions that he includes with the program.

Also you should be seeing a new game by TPUG stalwart Ron Obvious. Ron calls this one **Ghoul Dogs**. It is not like anything that you have ever seen before!

People that are into telecommunications should be watching for another communications disk. Recently I have been collecting and receiving a lot of excellent terminal and BBS programs that are compatible with most of the Commodore 64 modems (1650, Pocket Modem, 1660, Mitey Mo, Westridge, etc...)

At the moment I am hard at work reorganizing a lot of the the old monthly disks, so in the very near future you will see some new category disks made up of previously released programs. While I have been devoting much of my time to this task, I have found that I have got quite a backlog of new material. That means that as soon as I get finished with the reorganization, I will be releasing some more 'M' series disks.

I would like to thank all those who have been contributing their efforts to the library. All of your programs and nice letters are very much appreciated. But, of course, I (and the other librarians) are still looking for more 'treasure'.

Remember, if I am doing something wrong then I want to hear about it! Chances are that if you don't tell me, I will never know...

Commodore 64 Music Disks: (C)S9, A, B, C and D

These five disks contain songs created by several very talented people using the commercial program **Master Composer**. The songs make the most of the SID chip and should be a welcome addition to your personal library.

Most of these songs were downloaded from CompuServe. I would like very much to give credit to the people that put all of the time into these creations, but only a very few files come with their own loader program and credits. The songs appear on these five disks exactly as they were downloaded from CompuServe. Credits appear only when they were included by the author. All five disks contain the same menu program. To load it, just enter:

LOAD "0:*",8 [PRESS RETURN]

Followed by:

RUN [PRESS RETURN]

Once you have done that all you have to do is select the song(s) that you want to hear, and sit back and enjoy!

Commodore 64 Freeware Disk: (C)$1

We are very pleased to announce the release of our first Freeware disk. This disk contains a package called **Music Assembler 64** for transcribing and composing music. The disk can be obtained from the club for $10.00, and complete documentation is available from the author for $15.00.

Commodore 64 Graphics Disks: (C)H1, 2 and 3

These three disks contain pictures that were created using **Doodle**. Also included is a menu program that allows you to look at any one picture, look at all of the pictures in sequence, or print a picture on your 1525 or MPS-801 printer in normal or expanded mode. If you use **Doodle** and have other pictures, this menu program can be easily modified to use them.

All of the pictures were created and donated to TPUG by Wayne Schmidt. If you have ever wanted to see some first-rate high-resolution work on the Commodore 64, these are the disks for you!

Commodore 64 KoalaPad Disk: (C)H4

This disk contains a menu system that requires a KoalaPad graphics tablet. If you do not have a KoalaPad then this disk is not likely to be of interest to you, but if you have one, you are in for a real treat. Roger D. Burge, the author, has really gone to town this time! The menu program is the same as any other menu program except that you use the KoalaPad

SOFTWARE ORDER FORM

TORONTO PET USERS GROUP

1912A Avenue Road, Suite 1
Toronto, Ontario
M5M 4A1

416-782-9252

416-782-8900

Name _____ **Membership No.** _____

Street Address _____

City/Town/P.O. _____

Province/State _____

Postal/ZIP Code _____ Telephone _____

DISKS

To order club disks by mail, send $10.00 for each 4040/2031/1540/1541 disk (4040 format), and $12.00 for each 8050/8250 disk (8050 format). We do honour purchase orders from school boards.

These disks are for use with a _____ computer and a _____ disk drive.

Please send me the following:

3 Letter/No. Code	Description	4040 or 8050 Format	Price

Total $ _____ .00

TAPES

To order VIC 20 or Commodore 64 library tapes, send $6.00 for each tape.

To order PET/CBM or Commodore Educational Software, send $10.00 for each tape.

These tapes are for use with a _____ computer and a datasette.

If for a PET computer, what model _____ - BASIC- 1.0( ), 2.0( ), 4.0( )?

3 Letter/No. Code	Description	Price

Total $ _____ .00

The prices indicated include postage and handling as well as Ontario Provincial Sales Tax (if applicable).

☐ Cheque/money order enclosed (payable to TPUG) ☐ Visa/Mastercard # _____

Expiry date _____ Signature _____

to move the arrow to the program name of your choice, and then press one of the buttons to enter your selection. Several other programs by Roger are also included. One of them is a very good torpedo game. There are a number of Koala-created pictures for your viewing entertainment, and much more! As I said before, if you have a KoalaPad, this disk is for you!

Presented by David Bradley
TPUG Library Co-ordinator
CompuServe ID# 70216,414

VIC 20 March Disk: (V)TH

Yes, you heard it here last — the TPUG office was broken into. The most serious loss, from the point of view of the VIC library, was the tape duplicator. The result is that tapes have been delayed in being sent out, so please be patient: the equipment is being replaced.

This month's disk has quite a few games on it, thanks to a generous submission from Tony Romer of Edmonton, Alberta. These are high-quality programs — I would have accepted them as Freeware but, as they were sent as a general submission, you'll gain an excellent set of programs for your personal library. There were some problems converting the games to disk, but I think those have been solved.

Garden Snake: Play a snake feeding on eggs in a suburban garden. Avoid the electric fence, any rotten (freckled) eggs, and consuming yourself. Clear the eggs to advance to a higher skill level. The game is joystick-controlled.

ZAP!!: Dodge the violet anti-stars, and strip the clubs, diamonds, hearts, spades and no-trumps from the screen. You have only a limited time to clear each screen and advance to higher levels. This is a joystick-controlled game for up to six players.

Trapped: You have only one exit from an n by n by n cube. Scale the walls, floor and ceiling to find it. If you don't have an expander, you are limited to a four floor cube; with one, you can play up to six floors. You should turn the VIC off and on before loading **Trapped** if you are using an expander, in order to reset memory pointers. The first four-floor game has an obvious solution — after that, you are on your own.

Kaleidoscope: A faithful reproduction of the child's toy. Press **SHIFT W** or **SHIFT T** to freeze a frame.

Apollo Lander: An accurate simulation of the first lunar landing. Use the cursor keys to adjust the LEM's burn rate as it descends to the moon's surface. Animation only occurs at the time of impact. The game is based on the laws of physics and the real LEM's design. However, the real LEM is easier to land because it has smooth controls. This version makes updates in intervals long enough to increase the difficulty.

Although, as I mentioned above, these five games are not officially Freeware, you may feel that the author deserves some extra compensation for the work that he has put into them. If so, please send two dollars to:

Tony Romer
307-9535 156th Street
Edmonton, Alberta
T5T 2N8

Presented by Daryl King

SuperPET June, 1984 and March, 1985 Disks: (S)TG and (S)TN

This month, I will briefly discuss two disks. The first is the March monthly disk, while the second is from last June. Somehow no description or index of that disk was published, yet it is a particularly interesting one. Both of these disks have been made available to TPUG through the generosity of ISPUG.

The March disk contains several programs designed to provide communication facilities to the various Waterloo languages. The first of these is **BASICOM**, a machine language program that — when combined with several mBASIC programs — allows a mBasic program to send and receive data through the serial port. Also provided is a core mBASIC program to facilitate your use of **BASICOM**. A documentation file on the disk provides additional information on how to interface to these facilities.

In a similar vein, **APLCOM** provides a machine language interface to permit the APL user to easily utilize the communications capabilities of the SuperPET from his favourite language. The final communications program is a generalized version of **BASICOM** to operate with the other languages. Also on the disk is Steve Zeller's APL workspace containing all the functions published in Issue 14, volume 1 of the *SuperPET Gazette*. These functions are also related to assisting with communications, and are documented with the text of the supporting article.

The second disk I want to talk about is the June 1984 release disk. This disk is a starter package for the new user of the SuperPET, but contains many items of interest to the more accomplished hacker. First, it contains the text for a 28-page introductory and reference manual on the SuperPET and its Waterloo interfaces. The rest of the disk contains a set of general utilities, along with sets of specific utilities and demonstration programs for each of the languages (except COBOL). There are routines to assist the new user in utilizing the language of his choice (again except COBOL). This is a fine disk and should be a great help to SuperPET owners who wish to explore further.

Presented by Bill Dutfield

PET March Disk: (P)TH

This disk features not only the latest version of Rick Illes' **Electric Pencil** word processing program, but also a Freeware contribution from John Easton — **MemoCal**.

Electric Pencil comes complete with versions for 8032 and both fat and skinny 4032s; and with a quick reference guide as well as an extended one.

MemoCal, which produces a monthly calendar with up to ten entries a day, is written for PET and Commodore 64, and is also fully supported with documentation. As you probably know by now, Freeware programs are — unlike our other library programs — *not* in the Public Domain, although the authors have made them available to TPUG to distribute in the usual way. The normal practice with Freeware is for the author to suggest an appropriate price for the program in the on-disk documentation. If you agree that the program has merit, you are asked to send money directly to the author. In this way, we hope to generate high quality, inexpensive software for club members, while at the same time giving authors of good programs the support they deserve.

Other programs on this month's disk are **Don't Load Me** — a program with unusual results that you had better try for yourself; a utility written by Jim Butterfield and modified by Rick Illes to protect your programs by making them auto-run; a utility to let you download your own characters or do hi-res prints on an MX-80; a program for electronics enthusiasts to calculate resistor values; and an upgraded version of the game **Warlords**.

Presented by Mike Donegan

PROTECT YOUR COMPUTER COVER IT

Covers For All Makes and Models of
Commodore Products
Set of Three (Keyboard, Disk Drive and Monitor) $17.50

Standard Size Printer Covers $9.50
Large Carriage Printer Covers $11.50
Pets and Double Drive Covers $9.50
Call For Prices on Specials
We Ship Prepaid On Cash, M/C or Visa Orders
By Phone Or Mail

NAME _____
STREET _____
CITY _____
PROV. _____ P.C. _____
M/C _____ VISA _____
NUMBER _____
SIGNATURE _____

C.P.U. ELECTRONIC SYSTEMS CORP.
2652 SLOUGH ST.,
MISSISSAUGA, ONT. L4T 3T2
TELEPHONE (416) - 677- 8200

special prices for schools and dealers

Ask Someone Who Knows

If you enjoy **Jim Strasma's** many books, and his articles in this and other magazines, you'll be glad he also edits his own highly-acclaimed computer magazine, now in its sixth year of continuous publication. Written just for owners of Commodore's many computers, each **Midnite Software Gazette** contains hundreds of brief, honest reviews.

Midnite also features timely Commodore® news, hints and articles, all organized for instant reference, and never a wasted word. Whether you are just beginning or a long-time hobbyist, each issue will help you and your computer to work together effectively.

A six issue annual subscription is $23. To subscribe, or request a sample issue, just write:

MIDNITE SOFTWARE GAZETTE
P.O. Box 1747
Champaign, IL 61820

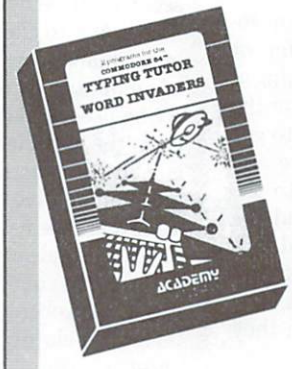
You'll be glad you did!

TRIVIA PLUS™

- Over 3,500 questions
- 8 fascinating categories
- No typing required
- Excellent graphics and sound (includes over 100 songs!)
- For 1 to 6 players
- In 'Trivia Plus' a good bluff may be the next best thing to the right answer

Commodore 64™
Disk $24.95

TYPING TUTOR + WORD INVADERS



REVIEWERS SAY:
"This is the best typing tutor we have seen yet; ★ ★ ★ ★ +"
INFO-64

"Computer aided instruction at its best." **Commander**

"This is an excellent program that makes typing practice an enjoyable pastime instead of boring drudgery."
DILITHIUM PRESS

Rated the BEST educational program for the VIC 20
Creative Computing

CUSTOMERS SAY:
". . . delighted with my son's progress . . . he is the only one in his second grade class who touch types at the computer."

"Your Typing Tutor is an excellent program . . . our 4 children literally wait in line to use it."

"Thoroughly satisfied, can't believe how fast I've learned to type. I've never typed before."

In daily use by schools across the USA.

NEW! Commodore Plus/4 or 16 . . . Tape $21.95 Disk $24.95
Commodore 64 . . . . . Tape $21.95 Disk $24.95
VIC-20 (unexpanded) . . . . . Tape $21.95

IFR (FLIGHT SIMULATOR)

REALISTIC AIRCRAFT RESPONSE

"Has a quality of realism which sets it apart from others, even those I've tested in flight school."
Compute's Gazette

"Great program!" **INFO-64**

"It is tremendous fun."
Compute's Gazette

"Flight tested by an air traffic controller, two skilled pilots and an elementary school class. Highly recommended by all."
Midnite Gazette

"This is an unbelievably realistic simulation of the difficulties facing a pilot in instrument flying. I'm a 747 pilot and I think that this simulation could do a lot to improve the reactions and instrument scan habits of even very experienced pilots." **747 pilot**

NEW! Commodore Plus/4 or 16 . . . . Tape or Disk $29.95
Commodore 64 . . . . . Tape or Disk $29.95
VIC-20 (unexpanded) . . . . . Cartridge $39.95

ACADEMY SOFTWARE

Shipping and handling $1.00 per order. CA residents add 6% tax.

VISA MasterCard

P.O. Box 6277 San Rafael, CA 94903 (415) 499-0850

Reviews

The Second Self: Computers and the Human Spirit

by Sherry Turkle

Distributed in Canada
by General Publishing
Price: $23.95
362 pages

Review by Mike Levin

Sherry Turkle's book is perfect for someone who is curious about the different reactions to using and programming a computer. It is also a fine book for the computer professional who wants to get behind the technology of hardware and the technique of software, and into the connection between the person and the results in programming style. And it is a very good book for someone who knows little or nothing about computers, and cannot understand the fascination they have for others.

For those of us somewhere in the undefined category of hobbyists fascinated with this rapidly changing field, but perhaps uncertain about its impact, Turkle is stimulating and challenging reading. She reassures us that we are dealing not with a dehumanizing technology, but with something to which we bring creativity, and which, on the other hand, shapes our thinking. Throughout the book, the message that the ultimate control remains with the user is very clear. Moreover, Turkle's research demonstrates the deep satisfaction and creativity that are part of computer programming and use.

The central question of the book is how computers affect us, their users, and how they change our thinking. Turkle answers this question in two ways: with regard to the personal 'interface' of the individual and the computer, and with regard to the general impact of computer use on our thinking about the human spirit. She believes that the use of new forms of technology changes our definition of humanity.

Turkle did hundreds of interviews with users, and their quoted statements illustrate the broader questions she asks about the impact of technology. Every type of computer user is represented, from video game players of all ages, to hackers and scientists developing artificial intelligence. The feelings, goals and ideas of the users are quoted. Turkle combines this direct reporting method with psychological ideas to develop her analysis of how users are affected by their interaction with the computer. She expands on these individual responses to outline the patterns of behavior that make up the culture of computer users.

Her central organizing idea is that, in the use of the computer, a person projects an image that comes from his personality onto the machine he uses, creating 'a second self' — hence the title of her book. Her goal is to explore the changing sense of the human spirit that the widening use of computer technology is creating.

She uses well-chosen examples drawn from the experiences of individuals. She is able to illustrate the way different kinds of creative minds address programming problems, and to record the pleasures and satisfactions the computer affords beyond those of solving a technical problem. She shows how the different levels of involvement and competence create a culture of computer users, with rules, ideas, heroes, morals, standards, goals, and recognition of achievement. For the person outside the computer culture, she recounts in a lively way its great myths and explains its values. She even manages to illuminate the aspirations and motives of the hackers and artificial intelligence scientists.

Turkle's ideas about how technology shapes the human spirit and changes our concept of what being human means are provocative; her research is thorough and original; her style is lively. *The Second Self* is a very worthwhile book! □

Pro-term 64

from King Microware

Terminal program
for the Commodore 64
and a variety of modems

Review by Greg Payne

Pro-term 64 is a user-friendly, menu-packed terminal program, for use with the Commodore 1600, Commodore 1650, 1650 compatible modems, Mitey Mo, Hesmodem 2, Hayes Smartmodem 1200, or any RS 232 type modem.

Pro-term 64 has commands for two 1541 disk drives. It will also support IEEE drives, such as the 2031, 4040, or the MSD disk drive used with a transparent IEEE card. It also has many printer options, and will support either Commodore printers or any properly interfaced parallel printer. For this review, I tested the program with a Mitey Mo modem, two 1541 disk drives, and a Compute Mate CP80 printer with a Card? + G interface.

This terminal program has a 40/80 column display, full/half duplex, status line, auto dial, auto logon, wordwrap, DOS commands, screen dump, modem on/off, up/downloading, real-time clock, on-line clock, RAM buffer, printer support, programmable function keys, remote terminal modes, and VT/52 and Televideo 910/920 terminal emulations. It is written entirely in machine language.

Pro-term 64 also offers the ability to customize certain set-ups in the program. Telephone numbers, screen set-up, auto logon, function keys and RS 232 parameters can all be saved as default files. These can be loaded in at the end of the main program load.

The auto dial mode works well with either tone or rotary dial systems. It can handle up to twenty numbers at a time, and has a good menu screen containing system names, numbers and protocols. When connection is made, it automatically goes to terminal mode, sets up the protocol, and shows the system name on the screen.

Auto logon automatically responds to host system prompts and is very easy to use. I find it works well with **Compuserve**, but with Bulletin Board Systems it responds too quickly; and even then, the first characters of your response are lost. This can be corrected by leaving spaces in front of your responses in the auto logon set-up.

Pro-term 64 has a 19K buffer in 40 column mode and an 11K buffer in 80 column mode. It has various buffer commands such as open, close, load, save, view, print, transmit, and transmit a line. The buffer can be used to receive or transmit sequential files.

There are two programs on the disk for changing sequential or image files to program files and back. **Pro-term 64** can also be used in conjunction with a word processor, for making up and editing buffer files.

Pro-term 64 can be used for up/down loading on Bulletin Board Systems using Steve Punter's 'old protocol'; or between

two Commodore 64s. X/on X/off up/downloading is advertised on the program jacket, but I can't find this feature in the program or the manual.

The 'Wait for Call' option has three choices. *Direct Terminal* goes to terminal mode when a ring and carrier are detected. *Mini BBS* allows you to store a message in the buffer, and it is sent when a ring and carrier are detected. With *Visual Phone Answer*, you can leave a message in your buffer that is sent when a carrier is detected, allowing the computer calling to leave you a reply that is then stored in your buffer. All three modes allow you to receive either voice or data calls.

There is also a Status Line on the top of the terminal screen. It tells you how much room is left in your buffer, the time of day, an on-line clock, and if your modem signal is off or on. Both clocks have programmable alarms.

Pro-term 64 is a very good terminal program, with a well-written manual. The only major drawback I find is that it doesn't have Steve Punter's 'new protocol'. □

Ring of Power
from Quicksilva
Adventure game
for the Commodore 64

Review by Marya Miller

One fateful day . . . the King lost his mind and, although he searched for it high and low, was unable to find it, and so was driven from the kingdom . . .

No, your Quest is *not* to find the king's mind: merely the crown jewels. Nice and simple.

Mind you, finding them is not as easy as you might think. You have to cross oceans, wander around beaches, forests and tea gardens, explore subterranean passages and mazes, and contend with heartless customs officials and elevator operators, angry dads, alcoholic pirates and bacon-brained giants. To name but a few.

All this is pleasantly entertaining. The game is intelligently planned and set out. The obstacles are sometimes real puzzlers, and therefore very satisfying when you finally do overcome them. And there are really no boring aspects to the game at all.

Well, almost no boring aspects. The game *can* be played in 'graphics' mode or text, but let me warn you — the 'graphics' mode is slow, tedious, unimaginative and a nuisance. Fortunately, it is also optional. □

Quintic Warrior
from Quicksilva
Arcade-style game for
Commodore 64 and joystick

Review by Eric Miller

Quintic Warrior has nothing to do with the artwork on its package. Apart from that, it is a very good game.

One feature I particularly liked: when you kill a mutant, the word 'ZAP!' flashes on the screen. The mutants come in a variety of colours, which adds interest to the onslaught on your screen, preventing the game from being another Space Invaders clone.

It was easier (and therefore more fun) to score at the higher levels, because you gained extra points, but it was harder to actually stay in the game (naturally!): which was both satisfactory *and* challenging.

Another thing I liked about **Quintic Warrior**: you could pause the game by hitting the space bar, and resume it again by hitting **RETURN**. Great for when you are on a hot streak and the phone starts ringing. Or you have to untie your kid sister from the railroad tracks.

One annoyance: when zigzagging around at high speed, occasionally you run across your own firing line and get killed. Also, one hazard you have to contend with is your own malfunctioning targetting grid (supposed to zero in on mutants, but which turns on you instead): if you aren't actually working the joystick, your computerized weapon system will kill you repeatedly until all your lives are exhausted. You have to be lightning fast in jumping out of the sights to avoid this terrible fate. Frankly, it's more of a nuisance than a challenge.

Quintic Warrior is one of the more interesting games I have played on my C-64 for quite a while. It was nicely put together, but from the picture on the package, I expected an adventure game rather than an arcade game. However, fighting the mutants was pleasant. Everyone needs to do a little laser-blasting now and again . . . □

Inside Commodore DOS
by Richard Immers
and Gerald G. Neufeld
Published by Datamost,
20660 Nordhoff Street
Chatsworth, CA 91311-6152
508 pages. $19.95 (US)

Review by Michael Quigley

It is unfortunate that, in order to truly understand how the 1541 disk drive works, you have to shell out more bucks on top of the cost of the drive itself. In the case of this book, however, the money is well worth it.

Although there are other treatises on the 1541, the great delight about *Inside Commodore DOS* is that it is well bound and printed, and has been created by people who are not only literate (a real rarity in the field of computer literature) but have a sense of humour, to boot.

About two hundred of the book's pages are devoted to explaining the various commands, how data is organized on a disk, direct-access programming, how to create errors, and how to recover from various nightmares (like physically damaging the disk).

The remaining pages are taken up by an analysis of the 1541's ROM. This is a disassembly, but not in the normal sense one may be accustomed to with a machine language monitor. It lists the starting addresses of routines (*all* of them, from $C100 to $FFFE) and then provides a description of what happens at each location. Anyone who wants to get the usual kind of disassembly will have to use one of the programs that reads any area of the drive's RAM or ROM, and then stores it in a program file. This program file can then be loaded into the computer and examined. (Another source of this code is in *The Anatomy of the 1541 Disk Drive*, published by Abacus Software.)

Not all portions of the book are gospel truth. There are some passages on the alleged incompatibility between the 1541 and 4040 drives that are not accurate, according to one knowledgeable member of our users' group, an expert on the 4040.

Still, these faults aside, *Inside Commodore DOS* is an excellent addition to your no doubt ever-increasing library of computer books. □

New Word Processor 'Worth the Wait'

Review by Dave Powell

***The Wordprocessor**, written by Steve Punter. From Pro-Line Software Ltd., 755 The Queensway East, Unit 8, Mississauga, Ontario L4Y 4C5. On disk for the C-64. $69.95 (Cdn.)*

This is the long awaited successor to **WordPro 3+**. It's had a bit of an identity crisis, with several name changes since conception (**WordPro 64**, **WP64**), but it has been well worth the wait. Comparison with **WordPro 3+** (which, incidentally, is marketed by Professional Software — not Pro-Line) is inevitable. To my mind, the new product is far better, and would be the preferred purchase. However, if one already had **WordPro 3+**, one would have to be a perfectionist or rich to want to buy **The Wordprocessor** as well.

Output

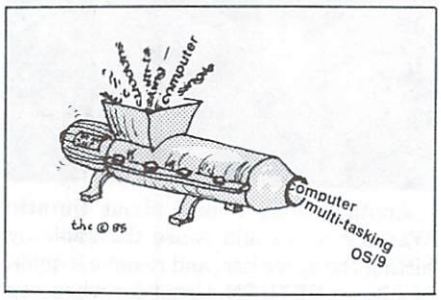
The C-64's forty-column screen is a trial for authors of word processors, because the output is hard to visualize on forty columns. Some products use special character manipulation to squeeze in eighty columns; some scroll sideways as one types; and some — including **WordPro 3+** — ignore the problem (wait to see it on the printer!).

The Wordprocessor takes a three-step approach. During editing, one sees a normal screen, and the program moves words so that none is split over two lines. This happens as one types, even in insert mode, when other lines may be reformatted as well. Steps two and three are on output — 'video' or 'mapped' may be chosen, rather than the printer. Both of these show the effects of all the formatting commands. 'Video' shows forty columns of the output and can be stopped at any point, and scrolled left and right. By this means, 160 column output can be handled (many printers are this wide), whereas squeezed eighty column output would fail. Mapped output shows the whole width at once, not as characters, but as 2 by 2 pixel blocks (very small squares). Thus the 'look' of the lines can be examined, though the text cannot be read. Mapped output shows the same number of lines — twenty-three — as video output at any time. Video output can be switched to mapped (and back and forth) with one keystroke.

This innovative approach works. Proof reading is done on the text as entered, and the appearance, including such things as pagination, can be checked in either of the screen output modes. Underlining shows in video mode as reverse characters, and boldface in the highlight colour (yellow, as installed). I had to try: if both are specified, it shows as reversed yellow!

Two things are missing. There's not even a limited upwards scroll in video or mapped mode, so if one misses a part, it's start-over time. Secondly, in mapped mode, the screen is big enough to contain a whole sixty-line page, and I wish it did. This would show the vertical 'balance' of a page — especially important for one page business letters, and the like.

Some word processors support a single popular printer and make it jump through hoops (for example, giving the 1525 descenders and underline by using the graphics mode). **The Wordprocessor** uses separate printer modules for a large variety of printers, and uses the standard



facilities offered by each particular printer to good effect. This is good if one has more than one printer, or is going to change, or has a versatile printer, but not if one has a 1525. Then again, one may ask why one has a word processor if one's printer is a 1525.

One of the 'printer' modules actually outputs the formatted text to disk, in Punter BBS format — useful if one is into uploading.

Miscellaneous features

There's an excellent implementation of the full set of disk commands, including easy reading of the error channel. The directory list is neatly formatted in two columns, and a selection may be made from the screen without having to retype the filename.

I particularly like the fact that the abort key (the **f1** function key) works in every case except during disk access. There's also a warm restart key. With these keys, one has the confidence to experiment, knowing that an exit is nearby.

To customize the package, one can run a supplied program, answer the questions, and produce a file that will be read on each subsequent startup. The screen colours can be specified, and up to four unit/device combinations for disk. It's nice to see that multiple 1541s are supported, and that there is no automatic assumption that the second one has to be unit 9. Unless one has a large linked file on more than one diskette, or a file full of form paragraphs, there's no need for more than one drive, though. Once the program has loaded, including the printer module, there's no need for the program disk.

Customizing is not for the squeamish. The program disk has no write protect notch, and the first step in customizing is to cut one! One has to *really* want to customize. Incidentally, once the notch is cut, one might as well rename one's favourite printer module to the default name, so that it gets loaded automatically.

Easy to use

I find **The Wordprocessor** very easy to use, especially for writing letters (or articles). For reports, lists, or tables, it is a little less friendly. For instance, the tabs only extend to column 40. Copying a line with embedded spaces (such as part of a table) loses the spacing, unless one remembers to use forced space mode, or the 'graphic tab' feature.

The manual is very good. It is the new standard Pro-Line size, well written, in a good order, and with a quick reference section at the back. There's no index, but this is partially compensated for by a fairly comprehensive contents page. There are a couple of errors and typos, but nothing that one can't work out. It's not a training manual — one will be available (for a price) later on. Those who are familiar with a word processor (especially **Wordpro 3+** or any of its clones) should have no problem.

The Wordprocessor is a good word processor that will meet the needs of most households, and many small businesses. It has few bugs, it is easy to use, and the price is right. □

Spelling Checker Not For Everyone

Review by Dave Powell

***Spellpro 64**, written by Jim Butterfield. From Pro-Line Software Ltd., 755 The Queensway East, Unit 8, Mississauga, Ontario L4Y 4C5. On disk for the C-64. $69.95 (Cdn.)*

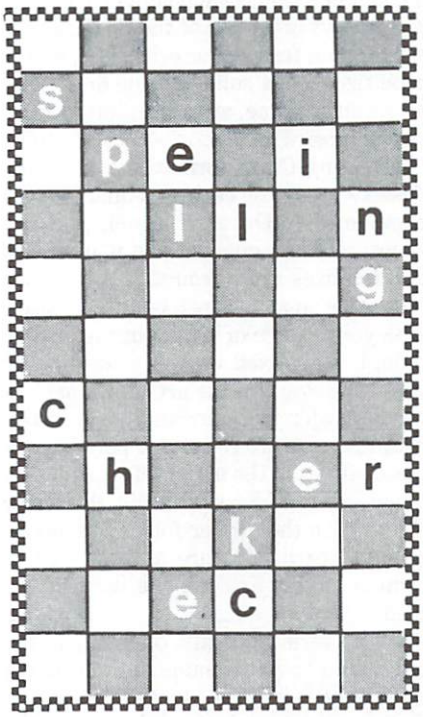
Spellpro 64 is a companion product to **The Wordprocessor**. It reads a **The Wordprocessor** file and checks words for inclusion in a dictionary. Any word not in the dictionary may be a spelling error, or it may just be a new word. **Spellpro** provides the means to go through a list of 'unknown' words and, for each one, either skip it, correct it, or add it to the dictionary.

A basic dictionary is provided, and this can be copied to another diskette and expanded to a maximum of 25 thousand words. One may choose to maintain many separate (specialized) dictionaries, and keep backups. There is provision for updating the dictionary manually, or automatically from a list produced as a result of a spelling check, or from a sequential file. Corrections identified during a **Spellpro** run may be stored, loaded into **The Wordprocessor**'s Extra Text area, and used to update the original text automatically.

I had some problems with this product. When scanning text, it ignores apostrophes, hyphens and 's' suffixes. I'd prefer it to ignore trailing apostrophes and to split hyphenated words into their components. (The shifted hyphen, used for semi-automatic hyphenation in **The Wordprocessor**, would be excepted.) Because final 's' is ignored, a word such as *illnes* will be accepted as correct if *illness* is in the dictionary. Capitalized words are converted to lower case prior to checking and, having failed the check, are presented — still in lower case — for possible correction. Without the context, this can be confusing: one of my documents had an address in it, and one of the words that came up as being wrongly spelled was *ave*. This had me searching for quite a time — how could I correct it if I didn't know what it was? Was it a partial *have* or *gave*? No. It was in the address, as in *123 Somewhere Ave.*!

The checking process is quite fast. It looks like some really efficient code is being executed here. But I found it time consuming to have to go through the list of 'spelling errors' to see which ones really were errors. With the supplied dictionary, one of my earlier articles had 130 'hits' — and no errors. It was my intention to update the dictionary with these, and try the next article, and so on until I came to this one. I found that the time to update the dictionary was prohibitive: the update is quite slow as it reads and writes each file of words (26 files, one per letter) that has a change. Naturally, my update hit every letter except V, X and Z!

The manual update process seems quite comprehensive, but is intimidating on the



first try. One logical inconsistency is that once a word with an apostrophe gets in, one cannot delete or change it, because the keyboard input routine won't accept an apostrophe!

I was also upset by the disk support. My usual beef: good support for 4040 or one 1541, but poor for two 1541s. The separate program that backs up a dictionary doesn't handle two 1541s. The main program starts out by asking for a unit and device number if one has two drives. "Usually #9", the manual says. The prompt will take only one character, which doesn't leave much room for 10 or 11, and anyone who read "Two disk or not two Disk" (*TPUG Magazine*, Mar/Apr 1984) will remember how I came to have a unit 10! Without thinking too far ahead for possible consequences, I left the '1' of '10', and carried on. Sometime later, I found myself being prompted to hit PLAY and RECORD ...

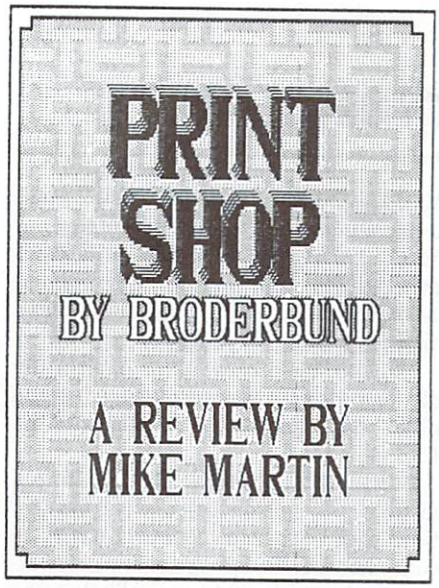
I stopped the process of customizing my dictionary on the second round, when the disk hung somewhere in the middle of the Fs.

In normal use, one would customize a dictionary in small doses, and the frustrations that I experienced would not be as concentrated. As the dictionary gets better, the 'errors' will be more likely to be true spelling errors rather than candidates for dictionary additions. One caution, however. With any spelling checker that allows updates, there is a danger that one will proliferate and legitimize one's errors by adding erroneous words to the dictionary. Be sure to check all the words that are added! In fact, check the supplied dictionary as well — I found six errors in a quick scan of the listing.

Do you need a spelling checker? I found that I don't. In my **The Wordprocessor** review, the supplied dictionary found 103 words it didn't know, and one error. This was before I'd proof-read it. It's not that I don't mis-type words — I do — but I tend to see errors as I commit them. Running a spelling checker is too time consuming for too little benefit in my case. If you can't spot your own typos, and you need clean copy, get one, and spend some time to get a good dictionary. But if you can't spell, remember that no spelling checker is better than its dictionary. Expect to spend time with a hardcopy dictionary (you remember — a book!) to check every word that comes up.

Spellpro 64 does an efficient job. I found it integrated well with **The Wordprocessor**, and I liked the way the dictionary customization can be done semi-automatically as one finds missing words. I've seen checkers where each word would have to be retyped to get it included. Personally, I don't think I will get much use out of the product, but then, as my wife has observed, I type so slowly, it's not too hard to get the spelling right.

One last note to Pro-Line — check out the screen where it says "Gathering words for addition", prior to updating a dictionary ... you missed a spelling mistake! □



Review by Mike Martin © 1984

Originally written for the Apple, **Printshop** by Broderbund quickly became a best seller. One distributor told me that the company had doubts that it would sell, and almost did not release it. But it fills a strong need of most users of home or light business computers.

It is technically a graphics program, but not of the usual kind. Almost all graphics programs deal with the monitor screen and concentrate on colour, plotting and shapes, sometimes including a screen dump. **Printshop** is oriented almost entirely to printers. If you don't own a printer, stay away from this program. In most cases, you will not even see a screen version of what will print: only the individual elements.

The program is very friendly. You could boot the disk and print a card without opening the reference manual, and do pretty well. The manual is good, and a quick reference card with all the art cuts is included. Two versions of the program are on the disk. Side One works with Epson RX/MX/FX, Gemini Star 10/15X, C-Itoh 8510, Legend 880, NEC 8023A, Panasonic KX-P1090/1091, Tally Spirit 80, Blue Chip, and Okidata 92/93. Side Two works with Commodore VIC-1525 and MPS-801. Interfaces supported include Xetec, Cardco, Grappler CD, Tymac Connection, Turboprint/GT, and Micro World-350. The program is keyboard-driven, but a joystick or a KoalaPad may be used for graphics design.

Most of the modules work the same way. The cursor keys are used to 'highlight' your selection, and the **RETURN** key implements it. The first menu offers Greeting Card, Sign, Letterhead, Banner, Screen Magic, and Graphics Editor formats. The operations in each format are basically the same. Each one is displayed on its own screen, fully documented.

The basic steps are straightforward. You choose from nine borders, pick an art cut by name or number, select its size and position it, choose your print style, type your text, and then print. If you change your mind, just use the left arrow key to go back a few screens. The program is very forgiving, and easy. I was surprised at how few mistakes crept into my efforts. If you make errors in your choices, the printout may not be exactly what you wanted, but is still good and usable. The printout takes about two minutes a page, and seems to be easy on the printer. On my Gemini, all nine pins print on each pass and the speed is about the same as normal printing. One holdover from the Apple days is the use of the **CTRL** key to access such features as erase line, toggle type size, select solid, outline or 3-D letters, centre a line, and select left or right positioning.

'Greeting Card' format lets you compose two panels, each one-quarter of a page in size. On each panel, you can choose one art cut and use it in one of several sizes and layouts. You use one type style on each panel, but in two sizes, with your choice of solid, outline or 3-D, though not mixed on the same line. If your type overlaps the art cuts, a narrow white border will surround each letter, making it easy to read. One panel prints upside down in the upper left corner, the other prints right side up in the lower right. With the proper folds, you have a greeting card. You are also allowed to print a 'credit line' on the back of the card.

'Sign' format prints one panel, full page. You have the same options on art cuts, positioning, type font and such, but the 'small' art cut is the same size as the 'medium' cut on the Greeting Card.

'Letterhead' format gives you one art cut printed right, left, or on both sides. One line of large fancy font type is allowed, followed by three small lines of plain block type and, if desired, a thin line below them. At the bottom of the page, another art cut and more type can be printed.

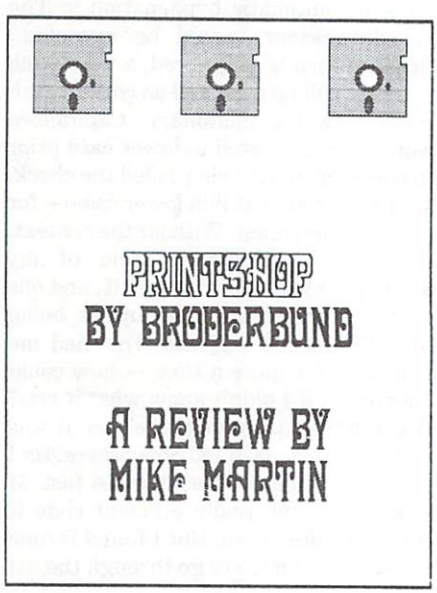
'Banner' format prints 7-inch high letters and art cuts lengthwise on the paper. The manual warns against printing too many banners at a time lest you overheat the printer. Pauses are built in for the computer to compose the next section, but a printer buffer would eliminate those pauses, possibly causing a heating problem.

'Screen Magic' displays a couple of kaleidoscopes on the screen. The first features round and oval patterns, and the second has more angular ones. When you see a pattern you like, you can freeze the screen for storage, printing, or the addition of lines of type. This printout is half a page, and horizontal. You can print it as is, or reverse the pixels as in a photo negative.

The 'Graphic Editor' allows you to create or change art cuts, but is somewhat limited. It offers a simple draw and erase option with keyboard, joystick or KoalaPad. One size, no plotting, no fill and no frills. You cannot use graphics files from another program with this one.

Printshop offers structured creativity. It is indeed creative and useful, but very set in its ways. You choose one, and only one, type style per panel. You are allowed to pick an art cut, but only one per panel. You choose size, and are given options on where to put it and in what patterns, but only in the given format. One interesting option is called 'tiled'. For this, the art cuts are printed with edges touching, forming a pattern.

Broderbund provides a two year warranty with free replacement, and a $5.00 (US) replacement (plus $2.50 postage) after two years. That's a very long warranty, and a most reasonable price. On the Apple version, Broderbund released a second disk with additional type styles and art cuts. A Commodore version is probably in the works. An Atari version is in release, and an IBM version is being written. All in all, even at the $50 (US) list price, I consider **Printshop** a great bargain. Short of the Macintosh, I have not seen anything better. No C-64 should be without it. □



TPUG Terminal Programs

Reviews by Ian A. Wright

There are many uses for a terminal program. Transferring programs or sequential files across a room or across the city can reduce the costs of operation for a small business. The ability to access a major stock database like Dow Jones can make anyone a wiser investor in the markets. Students can program their assignments at home and upload the working files to the college or university mainframe, rather than queue up till the wee hours on campus. The electronic cottage is already feasible — but you must be able to communicate.

The terminal program is the link between you and the host at the other end of the phone line. If you are forced to work with 40 columns and the host sends 80, this adds immensely to your frustrations; however, 80 column video on a C-64 is not terrific either! Where possible, a terminal should allow *lots* of options, even though you might not need them right away. Yet when you load your terminal program in after the third month you shouldn't have to answer the same dumb questions about parity and stop-bits that you did the first time — unless you want to.

A good terminal can make your entry into telecommunicating easier; a bad one can turn you right off. Two terminal programs available to TPUG members on (C)C3, the latest communications disk for the C-64, may be just what you need — and not just because they're free. These terminals have additional features that move them beyond the 'no-frills' programs that come packaged with a modem.

Let's take a look at these two fine TPUG programs.

Autodial/all

from the TPUG library

Updated terminal program for the Commodore 64 and 1650 Automodem and some others

Autodial/all is the latest version of the autodialling program **Autodial/1650** I reviewed along with the 1650 Automodem in the March/April, 1984, issue of *TPUG Magazine*. A description of the original program's many features are in that article, so I will not go into detail here. Some of the features are: full support of repeat dialling on a number of modems (including the HESmodem and Mitey Mo); dialling a sequential file of numbers that you can write and edit or revise; choice of one number to dial or a series of numbers; an alarm when contact is made; complete up/download, using Punter protocol; screen colours, etc.

The latest version has added options: there are now programmable 'control keys', uploading is now reliable, and there is now a choice of things like baud rates.

Autodial/1650 has been used successfully by many local BBS users for over a year, and the new version has proven to be reliable in both upload and download — although slow, because of the old Punter protocol used. The terminal provides many options in its menu, and the program itself can be rewritten if you wish to make any additions or alterations to customize your version, since it is mostly in BASIC. My only reservations concern the necessity to load a file of numbers and keep track of those already autodialled.

Term64

from the TPUG library

Terminal program for the Commodore 64

For the business user, the program **Term64** has some features that make it very appealing. **Term64** has been nicknamed 'Higgterm', because it was written by TPUG member Paul Higginbottom, who designed it for professional on-line use with mainframe host systems like Compuserve and The Source. **Term64** has a lot of outstanding features that are not commonly found outside expensive commercial programs.

The first thing you notice when you run **Term64** is the two-tone grey screen and the gorgeous character set — just like the IBM's. Very clear and business-like, and a refreshing change from distracting multicoloured games menus. The program is menu-driven, with nine initial options:

1 Enter Terminal Mode
2 Disk Directory
3 Examine/Alter Protocols
4 Print File/Buffer to Screen/Printer
5 Examine/Alter Function Keys
6 Load or Save Parameters
7 Send File to Modem
8 Save Memory Buffer
9 Exit Program

Notice the 'buffer' referred to in items 4 and 8? Oh wow! Now the owners of C-64s can actually *print* downloaded material, just as PET owners can. The C-64 and VIC 20 have a problem driving two devices (modem and printer) at the same time, since both devices work by interrupting the operating system. Paul's program gets around this problem by using free RAM as a buffer — an accessible section of memory — to store material so that it can be processed later.

This buffer feature alone turns **Term64** into your key to the realm of professional telecomputing, and it is complemented by many other useful features like a clock-timer, all-caps mode, and even word-wrap — all of which are displayed on the status line at the top of the terminal screen. Within the terminal mode you can alter fourteen different functions but, more important, these 'parameters' can be saved and loaded back in the next time. To me, this is a major indication of a professional program, since I don't have to make the same choices again each time I use it.

Term64 doesn't support autodialling modems. Paul's reasoning was that there are many kinds of autodiallers, and it would be difficult to support them all. To this end, there is a program called **Autodialling prologue** which will let you select a number and redial your modem until a carrier is received. It then loads in your choice of terminal program. This, too, is available on the latest TPUG communications disk for the C-64.

Paul Higginbottom originally wrote this program for commercial sale, but decided instead to release it into the public domain. For aspiring programmers, telecomputerists, and on behalf of the TPUG library, I would like to thank Paul publicly for this generous gesture. A professional terminal program available free — it boggles the mind.

Whether you choose to try **Autodial/all**, or **Term64**, these are two examples of the excellent programs that are available from your club library at a cost of a few dollars. If you download them from a BBS — they're free! □

Products Received

The following products have been received by TPUG Magazine *in recent weeks. While we do not have space to review them in this issue, we would like to describe them briefly in order to bring them to our readers' attention. Please note that these descriptions are based on the manufacturers' own announcements, and are not the result of evaluation by* TPUG Magazine.

Loadstar

Loadstar, PO Box 30007, Shreveport, LA 71130-0007, (318)-868-7247. Price: $9.95 (US) per disk.

TPUG Magazine has received the fourth issue of **Loadstar**, a monthly publication on disk for the Commodore 64. It is available by subscription, but individual issues are also sold in computer stores.

The first side of the disk includes the monthly cover, a short editorial (*Stargab*), two articles, a review section (*Influx*) and a card game called *Spectrum*.

Influx is a section of **Loadstar** written almost entirely by the subscribers. It includes reviews (*Cardkey Help, Simons Review, Seven Cities Review, Copy Reviews, Voice Synthesis*) and a *Question and Answers* column.

The second side of the **Loadstar** disk features several programs, all covering different areas of interest. For game fans, there are three arcade games: **Spider**, **Madman** and **Fireflies**. **Reel Facts**, a trivia-type program, presents a collection of Academy Awards facts from 1928 to 1982. **Western Writer** is a random Western movie script writer. **Planet Program**, described as a lesson in sprite animation, illustrates how to chain sprites and make an object appear to be rotating. Lastly, there are two utility programs: **Teacher's Gradebook** and **Memo-Pad**.

C-64 Software 1985

The Book of Commodore 64 Software 1985, from Arrays Inc., The Book Division, 11223 S. Hindry Avenue, Los Angeles, CA 90045. Price: $19.95 (US).

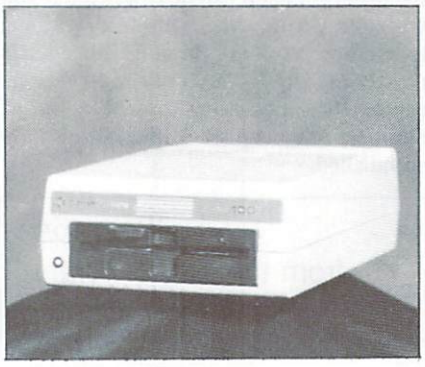
This book is a comprehensive guide to software for the Commodore 64, a collection of nearly six hundred critical reviews. In the introduction, the editors assure C-64 users that, to provide reliable information, software programs and packages were evaluated by experts, as well as field tested.

The reviews follow a standard format. Each program is analyzed, compared with similar packages on the market, and given grades (A through F) for various features (overall rating, ease of use, documentation, reliability, error handling, value for money).

Separate chapters deal with each category of software: business, utility, entertainment, education and home/personal. Two additional sections provide an alphabetical listing of the manufacturers and their addresses, and an alphabetical listing of the products reviewed.

SFD 1001 Disk Drive

Commodore SFD 1001 Disk Drive, distributed by Progressive Peripherals & Software, 2186 South Holly, Denver, Colorado 80222. Retail price: $399.95 (US).



Enclosed in a 1541-sized case, the **SFD 1001 Disk Drive** has a one megabyte storage capability in a double-sided, double-density format. A utility disk with C-64 and 8032 utilities will be included with the drive. An optional serial IEEE connector, called EASY-LINK, and cabling will be available through Progressive Peripherals & Software. EASY-LINK, to be released in late April 1985, will retail for $99.95 (US).

Count With Oliver

Count With Oliver, from Mastertronic Ltd., distributed by Bullock Industries, 60 Bullock Drive, Unit 5, Markham, Ontario L3P 3P2. Suggested retail price: $12.99 (Cdn.)

Count with Oliver, for the C-64, is designed to introduce children aged four to seven to the basics of counting, simple addition and subtraction. The diskette contains two programs: **Toyshop** and **Lollipops**.

In **Toyshop**, Oliver asks the young player to count toys in the shop window. His questions are simple, and written in large letters, so that children who can read may play the game on their own. Each time a question is asked, the player is required to enter the correct number using the number keys. Two tries at each answer are allowed. With three sorts of toys, in three colours, the program introduces the idea of sets as well as numbers.

In **Lollipops**, Oliver is at a shop asking for lollipops of different shapes and colours. As Oliver collects different sorts of lollipops, a player is asked to add them up. Subtraction follows when hungry Oliver eats some.

Quick Thinking

Quick Thinking, from Mastertronic Ltd., distributed by Bullock Industries, 60 Bullock Drive, Unit 5, Markham, Ontario L3P 3P2. Suggested retail price: $12.99 (Cdn.)

Quick Thinking, for the C-64, is another educational program from Mastertronic aimed at improving children's arithmetic skills. This one, though, is intended for older children, six to twelve years old. The disk contains two games: *Sum Vaders* and *Robot Tables*.

In **Sum Vaders**, a one or two-player game, a numbered space ship drops numbered alien robots. To prevent them from invading the world, player(s) must type, before each robot lands, the correct answer to a calculation using the space ship and robot numbers. The type of calculation (addition, subtraction, division or multiplication) is chosen by the player before the game starts. The level of difficulty can also be selected. As the game progresses, the robots are dropped from successively lower heights, requiring the player to think and react more quickly.

Robot Tables, the second game on the disk, is for the practice of multiplication tables. The object of the game is to control a robot machine processing raw material — numbered blocks — into a sequence of perfect robots. Needless to say, one cannot properly operate the robot machine without knowing the multiplication tables by heart. □

Presented by Astrid Kumas

COMAL INFO
If you have COMAL—
We have INFORMATION.

BOOKS:
- COMAL From A To Z, $6.95
- COMAL Workbook, $6.95
- Commodore 64 Graphics With COMAL, $14.95
- COMAL Handbook, $18.95
- Beginning COMAL, $22.95
- Structured Programming With COMAL, $26.95
- Foundations With COMAL, $19.95
- Cartridge Graphics and Sound, $9.95
- Captain COMAL Gets Organized, $19.95
- Graphics Primer, $19.95
- COMAL 2.0 Packages, $19.95
- Library of Functions and Procedures, $19.95

OTHER:
- COMAL TODAY subscription, 6 issues, $14.95
- COMAL 0.14, Cheatsheet Keyboard Overlay, $3.95
- COMAL Starter Kit (3 disks, 1 book), $29.95
- 19 Different COMAL Disks only $94.05
- Deluxe COMAL Cartridge Package, $128.95 (includes 2 books, 2 disks, and cartridge)

ORDER NOW:
Call TOLL-FREE: 1-800-356-5324 ext 1307 VISA or MasterCard ORDERS ONLY. Questions and Information must call our Info Line: 608-222-4432. All orders prepaid only—no C.O.D. Add $2 per book shipping. Send a SASE for FREE Info Package or send check or money order in US Dollars to:

COMAL USERS GROUP, U.S.A., LIMITED
5501 Groveland Ter., Madison, WI 53716

TRADEMARKS: Commodore 64 of Commodore Electronics Ltd.; Captain COMAL of COMAL Users Group, U.S.A., Ltd.

COME
AND SEE US
AT

COMPUTER FAIR

May 8-11
Toronto Convention Centre
Toronto, Canada

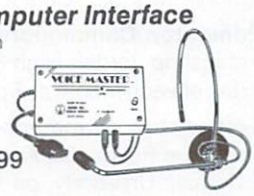
SALE SALE SALE

COMPUTEREYES
Video acquisition system for Commodore 64. COMPUTEREYES™ is the industry's first economical means of capturing real-world images on the C64. COMPUTEREYES™ is an innovative slow-scan device that connects between any standard video source and the C64. A b/w image can then be acquired under software control. **$189.99**

MIND PROBER
Announcing the amazing Mind Prober. Use it to probe someone's mind. Astounding. Now you can use your Commodore to reveal the hidden motives of others and unlock their secret thoughts. *Lets you read people like a book.* This scientific new expert systems software lets you in on the things most people are afraid to tell you. Their strengths, weaknesses, sexual interests, and more. **$29.99**

The Ultimate Human to Computer Interface
- **Speech Synthesizer** – Your Computer can talk to you "in your own voice"
- **Word Recognition –** Make your computer respond to your spoken commands
- **Voice Harp™** – A totally new musical instrument that you play by humming or whistling.

$109.99



FLEXIDRAW *the modern alternative to pencil and paper*

FLEXIDRAW™ enables Commodore 64 users to perform pencil and paper tasks utilizing the speed and full graphics capabilities of their computer. **$189**

MITEY MO - with NEW software
Works on DataPac with auto log-on. Smart Term 64 (Feb 85) now incorporates: status line; help screen; 300/1200 baud (full or half); escape key; 28K buffer, upload/download; VT52/VT100 emulation and much more. **Call for price**

C POWER from PRO-LINE
C language compiler for the Commodore 64. A disk-based true C language that produces native 6502 machine language object code. Includes Shell program manager; Editor; Syntax checking editor; Compiler; Linker; Function libraries;
531 page C PRIMER PLUS guide. **$119**

WIZARD from PPS NOW IN STOCK
Jump from ropes to ladders, dodge plummeting boulders and duck deadly arrows in your quest for valuable treasure. With joystick in hand you must explore forty dazzling screens, each a new and exciting adventure. Take the key to unlock the doorway to your next spine-tingling adventure. **$44**

Quantity	Description	Each	Total

Name _____
Address _____
City _____ State/Prov. _____
Please bill my ☐ VISA ☐ MASTERCARD
_____ Exp. _____ Signed _____

COMPUTER NETWORXX
PO Box 1448, Stn. T, Calgary, Alberta, Canada, T2H 2G6
CAN. PRICES 1-403-258-0844 **CAN. SERVICE**
Please add $5.00 for postage and handling.
Do not include provincial/state sales tax with your payment.

TPUG Associate Clubs

CANADA

C64 North Bay Users Group (Ontario) meets at Cassellholme on Olive St. on the first Wednesday of the month at 7:30 pm. Contact Matt Vautour 705-474-5692.

Chaleur Commodore Club (New Brunswick) meets at the District School Board, Dalhousie, on the third Wednesday of the month at 7:00 pm. Contact Terry Traer 506-684-4852.

Commodore Owners of Muskoka (Ontario) meets at MacAulay Public School, Bracebridge, on the first Wednesday of each month at 7 pm. Contact Mike Wilson 705-645-6300.

Edmonton Commodore Users Group (Alberta) meets at Archbishop Jordan High School, Sherwood Park, on the last Friday of each month at 7 pm. Contact Bob Kadylo 403-465-3523.

Fredericton Commodore Users Group (New Brunswick) meets in Room 105, Administrative Building second floor, at Saint Thomas University, on the third Wednesday of each month at 7:00 pm. Contact John W. Palmer, Comp 53, Site 15 Castle Acres SS#3, Fredericton, NB, E3B 5W9.

Guelph Computer Club (Ontario) meets at Co-operators Insurance Assoc. on the second Wednesday of each month at 7:30 pm. Contact Brian Grime 519-822-4992.

London Commodore Users Club (Ontario) meets at Althouse College of Education, main auditorium on the third Monday of each month at 7 pm. Contact Dennis Trankner 519-681-5059.

Niagara Commodore Users Group (Ontario) meets at Lakeport Secondary School, St. Catharines, on the first Monday of each month at 7.30 pm. Contact Ian Kerry 416-688-6464.

Sarnia C64 Users Group (Ontario) meets at Lambton College on the first Sunday of each month at 7:30 pm. Contact J.C. Hollemans 519-542-4710.

Saskatoon Commodore Users Group (Saskatchewan) meets in Room 2C02, Engineering Building, University of Saskatchewan, on the last Friday of each month (except June, July and December) at 7:00 pm.

Commodore Users Club of Sudbury (Ontario) meets at Lasalle High School in the cafeteria on the last Thursday of each month at 7 pm. Contact Tim Miner 705-566-9632.

PET Educators Group (Windsor, Ontario) meets at Faculty of Education Building, 600 3rd Concession, Windsor, on the third Wednesday of each month (not July and August) at 7 pm. Contact John Moore 519-253-8658.

Winnipeg PET Users Group (Manitoba) meets at Gordon Bell High School, Room 228, on the first Wednesday of each month at 7:30 pm. Contact W.P.U.G., P.O. Box 4096, Station B, Winnipeg, MB, R2W 5K8.

UNITED STATES

Boston Computer Society/Commodore Users Group meets at Minute Man Tech High School, Rt 2A (just off Rt 128), in Lexington, MA, every second Monday of the month at 7 pm. Contact Harvey W. Gendreau 617-661-9227.

C-64 Users Group, Inc. (Chicago, Illinois): seven chapters meet at 7:00 pm. **Northwest Chicago** (Logan Square) on the first Tuesday; **River Grove** on the first Wednesday; **Des Plaines** on the first Thursday; **Park Ridge** on the second Monday; **Calumet Park** on the second Tuesday; **Westchester** on the second Thursday; **Southwest Chicago** (Garfield Ridge) on the second Friday; **Evanston** on the third Wednesday. For exact locations and changes, contact Darrell Hancock 312-588-0334, or David Tamkin 312-583-4629.

Commodore 64 Owners of Petaluma (California) meets in the multi-use room, La Tercera School on the third Thursday of the month at 7:00 pm. Contact Robert Hermann 707-762-1376.

Commodore Computer Club of Toledo (Ohio) meets at Bedford Administration Building on Temperance Rd., between Lewis and Jackman Roads on the second Friday of each month at 7:30 pm. Contact Jim Cychler 419-475-9160.

Commodore Houston Users Group (Texas): **Clear Lake Chapter** — Nassau Bay City Hall, NASA Road #1, on the first Wednesday of each month at 7 pm. **Central Chapter** — Farrish Hall, University of Houston main campus. **NW Chapter** — Bleyl Jr. High School, 10,000 Mills Road (Cypress-Fairbanks SD), on the third Thursday of each month at 7:30 pm. **Klein Chapter** — Hildebrandt Middle School, 22,800 Hildebrandt Road (Klein ISD), on the third Tuesday of each month (except July & August) at 6:30 pm. Contact Mary F. Howe 713-376-7000.

Commodore Users Society of Greenville (South Carolina) meets at the Greenville National Bank, Community Room, 10 Pleasantbury Drive, Greenville, SC, on the last Thursday of each month at 7.30 pm.

Genesee County Area Pet Users Group (Michigan) meets at Bentley High School on Belsay Rd. on the third Thursday of each month at 7 pm. Contact Gordon Hale 313-239-1366.

Greater Omaha Commodore 64 U.G. (Nebraska) meets at South Omaha campus of the Metropolitan Technical Community College, 27th and Q Streets in Room 120 of the Industrial Train-

ing Center, on the first Thursday of the month at 7 pm. Contact Bob Quisenberry 402-292-2753.

Manasota Commodore Users Group (Florida) meets at the Florida Power and Light Building, Bradenton, on the second and fourth Thursdays of the month at 7 pm. Contact Robert O. Bronson 813-747-1785.

MAT-SU Commodore-64 Club (Alaska) meets at the Alaska Computer Systems store, Wasilla, on the third Thursday of each month at 7 pm. Contact Terry Maw 907-376-7508.

Michigan's Commodore 64 Users Group meets at Warren Woods High School in Warren, on the third Tuesday of each month at 7 pm. Call 313-773-6302.

Mohawk Valley Commodore User's Group (New York) meets at the Clara S. Bacon School in Amsterdam, at 7 pm on the second Tuesday of the month. Contact William A. Nowak 518-829-7576.

Mountain Computer Society (Sandy, Utah) meets at Murray High School on the second Thursday and last Tuesday of each month at 7:00 pm. Contact Dennis Senior 801-566-5593, or Don Jones 801-967-6641.

Russellville CUG, Inc. (Arkansas) meets at Oakland Heights Elementary School on the third Thursday of each month at 7:30 pm. Call 501-967-1822.

Sacramento Commodore Computer Club (California) meets at Kit Carson High School, on the fourth Monday of each month at 7 pm. Contact Geoff Worstell 916-961-8699.

S.C.O.P.E. (Dallas, Texas) meets at U.T.D., Erik Jonnson Building (Corner Floyd & Campbell Rds.), in Plano, on the second Saturday of the month at 1:30 pm. Contact Betty Clay 817-274-0709.

Southern Minnesota Commodore Users Group meets at Mankato State University on the first Thursday of each month at 7:30 pm. Contact Dean Otto 507-625-6942.

Tri-City Commodore Computer Club meets at Washington Public Power Supply System auditorium on George Washington Way on the second Wednesday of the month at 7:00 pm. Contact George Carpenter 216-946-7746.

Westmoreland Commodore User's Club (Penn.) meets at Westmoreland County Community College, in Youngwood, on the third Friday evening of each month. Contact Bob McKinley 412-863-3930.

Classifieds

This space is for the ads of TPUG members. Wanted or for sale items only. Cost is 25 cents per word. No dealer ads accepted.

For Sale: PET 2001N-32K with Waterloo BASIC, Disc-O-Pro, and Programmer's Toolkit ROMs; 4040 Disk; 8023P Printer; 300 baud acoustic modem; Cables; Software and Manuals. $1500. Don Pipkin, 673 E. 133rd Pl., Glenpool, OK 74033 USA. Phone 918-299-4257 evenings.

For Sale: C-64, Buscard II, 4040 disk drive cables and software, e.g. Paperclip and Consultant. Price $700. Call 416-276-9295.

For Sale: CBM 8032 and 8050 disk drive. $1000 (US) plus shipping. A. Buchanan, 407 Lewis St., Greenville, NC 27834.

ATTENTION

ALL COMMODORE 64, VIC 20, COMMODORE 16, AND PET OWNERS

A complete self-tutoring BASIC programming course is now available. This course starts with turning your computer on, to programming just about anything you want! This course is currently used in both High School and Adult Evening Education classes and has also formed the basis of teacher literacy programs. Written by a teacher, who after having taught the course several times, has put together one of the finest programming courses available today. This complete 14 lesson course of over 230 pages is now available for the COMMODORE 64, VIC 20, COMMODORE 16 and PET computers and takes you step by step through a discovery approach to programming and you can do it all in your leisure time! The lessons are filled with examples and easy to understand explanations as well as many programs for you to make up. At the end of each lesson is a test of the information presented. Furthermore, ALL answers are supplied to all the questions and programs, including the answers to the tests. Follow this course step by step, lesson by lesson, and turn yourself into a real programmer! You won't be disappointed!

We will send this COMPLETE course to you at once for just $19.95 plus $3.00 for shipping and handling (U.S. residents, please pay in U.S. funds). If you are not COMPLETELY satisfied, then simply return the course within 10 days of receipt for a FULL refund.

Fill in the coupon or send a facsimile.

TP

NAME:_____

ADDRESS:_____

CITY:_____

PROV./STATE:_____

POSTAL/ZIP CODE:_____

Check desired course:

COMMODORE 64 ☐
VIC ☐ PET ☐
COMMODORE 16 ☐

Send Cheque or Money Order to:
Brantford Educational Services
68 Winding Way,
Brantford, Ontario,
Canada, N3R 3S3

Complete course: $19.95
Postage and hand.: $3.00
Total: $22.95

Calendar of TPUG Events

Meeting Places

Brampton Chapter: Central Peel Secondary School, 32 Kennedy Rd. N. on the second Thursday of the month at 7:30 pm in the Theatre.

Central Chapter: Leaside High School, Bayview & Eglinton Aves. on the second Wednesday of the month at 7:30 pm in the auditorium for "advanced" computerists.

COMAL Chapter: York Public Library, 1745 Eglinton Ave. W. (just east of Dufferin) on the last Thursday of the month at 7:30 pm in the Story Hour Room (adjacent to the auditorium).

Commodore 64 Chapter: York Mills C.I., 490 York Mills Rd. (east of Bayview) on the last Monday of the month at 7:30 pm in the cafetorium.

Communications Chapter: York Public Library, 1745 Eglinton Ave. W. (just east of Dufferin) on the first Wednesday of the month at 7:30 pm in the Story Hour Room (adjacent to the auditorium).

Eastside Chapter: Dunbarton High School (go north on Whites Rd. from the traffic lights at Highway 2 and Whites Rd. to next traffic lights; turn left to parking lots) on the second Monday of the month at 7:30 pm.

Hardware Chapter: York Public Library, 1745 Eglinton Ave. W. (just east of Dufferin) on the second Tuesday of the month at 7:30 pm in the Story Hour Room (adjacent to the auditorium).

Machine Language Chapter (6502): Fenton High School, off Kennedy Rd., south of Steeles Ave., Brampton, on the first Tuesday of the month at 7:30 pm in the computer room. For further information call Garry Ledez c/o 416-782-8900.

SuperPET Chapter: York University, Petrie Science Building (check in Room 340). Use north door of Petrie to access building. On the third Wednesday of the month at 7:30 pm.

VIC 20 Chapter: York Public Library, 1745 Eglinton Ave. W. (just east of Dufferin) on the first Tuesday of the month at 7:30 pm in the auditorium.

Westside Chapter: Clarkson Secondary School, Bromsgrove just east of Winston Churchill Blvd. (south of the QEW) on the third Thursday of the month at 7:30 pm in the Little Theatre for **PET/CBM/VIC 20/Commodore 64**.

Are you interested in organizing some other interest group in the Greater Toronto area? Please let the club office know, by mail, phone, or TPUG bulletin board.

MAY

MON	TUES	WED	THURS
		1 Communications	2
6	7 VIC 20 Machine Language	8 Central	9
13 Eastside	14 Hardware	15 SuperPET	16 Westside Brampton
20	21	22	23
27 Commodore 64	28	29	30 COMAL

JUNE

MON	TUES	WED	THURS
3	4 VIC 20 Machine Language	5 Communications	6 Brampton
10 Commodore 64 Eastside	11 Hardware	12 Central	13
17	18	19 SuperPET	20 Westside
24	25	26	27 COMAL

commodore owners

DON'T

THROW YOUR PRINTER* OUT!

You can now custom design your own printer fonts or choose from one of the different varieties already on the disk. Not only that but you can read in any standard commodore ASC II sequential file and change the typeface.

All THIS PLUS:

1. Mix up to 15 fonts in one document.
2. Design custom fonts including symbols, foreign language, math symbols ect..
3. Includes font to give you descenders on your 1525/ 801 printer.
4. Convert most popular word processing files to custom fonts. For special effects.
5. Also includes the signwriter 64 program to print signs and banners.

TO ORDER FONT FACTORY/ SIGNWRITER CALL: VISA MasterCard

201-838-9027

* Requires 1525/ 801 or any other printer with graphics interface (MW-350, Ty mac Connection ect . . .)

Micro-W. DISTRIBUTING, INC
1342 B Route 23 Butler, N.J.

BLITZ!™

by Skyles Electric Works

The fast BASIC compiler that received rave reviews in COMPUTE!'s GAZETTE (Jan.'85) and TPUG magazine (Mar.'85)

Introductory offer: $99.95 Cdn.

Also: **Tennis Diary**™
$34.95 Cdn. ON DISK FOR THE 64

Keep a comprehensive, computerized record of your tennis matches.

Send check or money order to:
JCS Computer Software
P.O. Box 2570 Postal Station 'F',
Scarborough, Ontario, Canada M1W-3P2
Ontario residents add 7% provincial sales tax.

Dealer inquiries welcome.

Canadian JCS distributor

OS/9 Software NOW AVAILABLE!!

Spreadsheet – DynaCalc **US$99 Can$129**
A third generation spreadsheet. Powerful and easy to use.

Word Processor – Stylograph II **US$149 Can$189**
Menu driven, fast. Extensive features.
Formats to screen as you work.

Mailmerge – a self-standing program that merges files and creates form letters.

Spellcheck – a high-speed 40,000 word plus dictioary, works with Stylograph or any other word processor.

C Compiler **US$120** Can$166****
Full featured, faithful to Keran and Richie standard. The language of the future.

BASIC O9 **US$110 Can$152**
A full featured, sophisticated semi-compiled BASIC. See *BYTE* magazine, April 1984.

Pascal **US$175 Can$242**
A full featured standard Pascal Compiler.

Fortran (Avail. Aug. '85) **US$120** Can$166****
A full featured standard Fortran compiler.

SCRED **US$75 Can$104**
A full screen editor with full cut-and-paste.

DATABASE – COMING SOON

These prices represent substantial reductions from usual OS9 software prices.

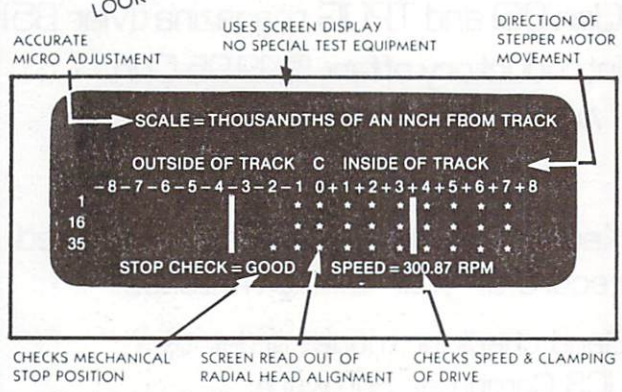
****10 copy bulk prices.**

Please add $10 for shipping/handling. All prices subject to change. Ontario residents add 7% PST.
Please order direct, enclosing cheque or money order to:
TPUG, 1912A Avenue Rd., Suite #1, Toronto, Ontario M5M 4A1

1541 PHYSICAL EXAM

IS YOUR 1541 HEALTHY?
OR WOULD ITS PHYSICAL EXAM
LOOK LIKE THIS ONE?

$39.95 U.S.



Package includes:
- True digital alignment disk with offset tracks
- Quiet Drive stops to reduce need for continued realignment on old style drives.

(703) 491-6502
800-762-5645
CARDINAL SOFTWARE

See reviews in: RUN, Jan. 1985, p. 122; Midnight Gazette #21, 1984, p. 49; Ahoy! April 1985, p. 32

13646 JEFFERSON DAVIS HWY.
WOODBRIDGE, VA 22191
In Canada APPIN MICRO
1283 PHARMACY AVE.
SCARBOROUGH, ONT. M1R 2J1
(416) 443-0843

TPUG Magazine Distributors

Dealers: *If you would like to carry* TPUG Magazine *in your store, you may order from any one of the following distributors:*

CANADA

Micron Distributors, Toronto, ON	800-268-1238
Compulit Distributors, Port Coquitlam, BC	604-464-1221

USA

Prairie News, Chicago, IL	312-384-5350
Levity Distributors, North Hollywood, CA	818-506-7958
Whole Life Distributors, Englewood, CO	303-761-2435
M-6 Distribution, Houston, TX	713-778-3002
The Homing Pigeon, Elgin, TX	512-276-7962
Northeast News Distributors, Kingston, NY	914-382-2000
Fred Bay News Co., Portland, OR	503-228-0251
Alonso Book = Periodical, Alexandria, VA	703-765-1211
Cornucopia Distribution, Seattle, WA	206-323-6247
Guild News, Atlanta, GA	404-252-4166
Micro-PACE, Champaign, IL	800-362-9653

*** FOR THE COMMODORE 64 ***

PUT THOSE FUNCTION KEYS TO WORK WITH

SCREEN DUMP, ETC ™

SCREEN DUMP, ETC sets up f1 through f8 to give the following capabilities:

f1 - HELP KEY (Information and ESCAPE key from other routines)
f-2 - SCREEN DUMP TO PRINTER (True dot by dot dump! Screen can be LO-RES or HI-RES, and can even include custom characters and sprites! - NO restrictions)
f3 - BASIC MEMORY ALLOCATION (Displays and allows changes to Start/End of BASIC RAM, Variables, Arrays, and Strings)
f4 - SCREEN DUMP TO DISK (f2 capabilities, PLUS sprite data blocks and custom character sets used for screen are also saved)
f5 - SCREEN MEMORY ALLOCATION (Displays and allows changes to locations of screens, sprite memory blocks and character set)
f6 - SCREEN LOAD FROM DISK (Reverse of f4 - locations can be changed)
f7 - HEXADECIMAL TO DECIMAL OR DECIMAL TO HEXADECIMAL CONVERSION
f8 - USER DEFINED (Transfers control to user supplied machine language program)

All of the above functions may be performed at any time, even during execution of a BASIC or machine language program. After the function key has completed its task, the interruped program will continue as if nothing happened! Compatible with most BASIC and machine language programs. f2 requires a 7 or 8 dot per byte DOT ADDRESSABLE printer such as Commodore, Epson, Gemini, etc.

34.95 Includes shipping (MO residents add 5.125% tax)
(44.95 Canadian funds)

Supplied on disk only (no tapes)

SATISFACTION GUARANTEED!
Return within 15 days for full refund

In U.S., PHONE 1-800-824-7888; Ask for Operator #530 (Orders only please)
(In Alaska & Hawaii, 1-800-824-7919; Oper. #530)

Commodore 64 is reg. trademark of Commodore Business Machines. Epson is reg. trademark of Epson America. Gemini is reg. tradmark of Star Micronics, inc.

MasterCard VISA

Phone, or send check or money order to:
IRQ, Inc.
P. O. Box 457
St. Charles, MO 63302
U.S.A.

"for Innovative, Reliable, and Quality solutions, look to IRQ"

THE ULTIMATE SIMULATION

STAR TREK KING

THE GAME

Version II

For The 64

- Impressive Graphics With Hi-Res Features
- Realistic Sound
- Strategic Thought Involvement
- The Only Game That Parallels The T.V. Series And Movies

UFLAND SOFTWARE (Disk Only)

Dept. A
P.O. Box 1324
Meaford, Ont.
N0H 1Y0, Canada
(519) 538-1758

$21.95 Cdn. $19.95 U.S.

Ont. Residents Add 7% Provincial Sales Tax
Please Make Cheque Or Money Order Payable To Dave Neale

Dealer Inquiries Invited

Even Spock Would Find It Challenging

DISKALIGNER

FOR YOUR 1541 DISK DRIVE!

In less than an hour, with just a Phillips screwdriver and the DISKALIGNER Disk, you can put your 1541 back on line, perfectly realigned!

$29.95 Cdn. **$24.95 U.S.**

(Ontario Residents add 7% Provincial Sales Tax)

G.R.Q Marketing Ltd.
P.O. Box 197;
Thornhill, Ontario
L3T 3N3

In the Toronto area DISKALIGNER may be purchased at **Electronics 2001**
5529 Yonge St., Willowdale, Ontario
M2N 5S3 (416)223-8400

HOT NEWS!!!

The BBS is back up!!!

BAID64

A new utility and basic aid for your C64

60 new commands including many of the BASIC 4.0 disk commands.
Do graphics without peeks and pokes and having to remember all those memory locations. Commands such as **HLINE, DRAW, HPLOT, MOVE, TEXT** and **HPRINT.**

Sprites, sound and screen commands get rid of the tediously long command lines. Just type in the note (E#, Gb, F, etc) or state the colour (COLOR 1,2,3,) or locate a sprite (SPRITE [num[x,y]).

Function keys are allowed -- there is a built in screen dump (text or graphics) -- type lines 120 characters long.

15 additional BASIC commands including **RENUM, TRAP, AUTO, HUNT, HELP, DEL, CHANGE**

ALL THIS AND MORE AT A PRICE OF **$49.95** (Ont. residents add 7% sales tax)

PHONE (416) - 677-8200 AND WE WILL ACCEPT YOUR M/C OR VISA OR SEND THE COUPON. WE SHIP PREPAID ANYWHERE IN CANADA WITHIN 24 HOURS.

NAME _____
STREET _____
CITY _____
PROV. _____ P.C. _____
M/C _____ VISA _____
NUMBER _____
SIGNATURE _____

C.P.U.ELECTRONIC SYSTEMS CORP.
2652 SLOUGH ST.,
MISSISSAUGA, ONT. L4T 3T2
TELEPHONE (416) - 677- 8200

special prices for schools and dealers

$UPER $AVINGS FOR TPUG READERS!!

JUST MENTION THIS TPUG AD IN YOUR ORDER, AND DEDUCT 5% FROM THE PRICES SHOWN BELOW!!!

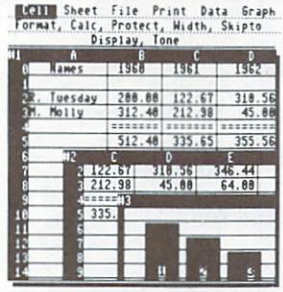
MITEY MO

C-64 MODEM WITH SMART-64 SOFTWARE AND UPLOAD/ DOWNLOAD

Plug-in modem for the **Commodore-64** includes everything you need to get on-line today! Access Bulletin Boards, electronic mail, data banks, games and more. Features easy-to-use manual, menu-driven **Smart-64** software, **Auto Dial/Answer/ReDial,** 28K buffer, program upload/download, save to disk, multiple baud rates, VT-52/100 emulation, help menus, graphics, X-modem protocol and more. Includes software, cables, manuals and **FREE access to CompuServ!** 3-year guarantee. Endorsed by the U.S. Commodore Users Group as "**the best price/performance communications package available**". Don't settle for less when you can have "MO", at **$139.95 postpaid.** (Reg. $159.95)

VIZASTAR

BRINGS LOTUS 1-2-3 POWER TO YOUR COMMODORE-64!



Actual screen dump printed by VIZASTAR

This ingenious U.K. program is sweeping North America! Imagine a **Spreadsheet, Graphics and Database program** all in one. **Vizastar,** the "Lotus" of the C-64 features **64,000 cell** spreadsheet with up to 9 window overlays, **line/bar/pie graph** capability, and integrated database. Powerful menu and executive for automatic operation. Compatible with most printers & word processors. Comprehensive manual, backup disk and tutorial. Incredible performance at **$179.95 postpaid.** (Reg. $189.95)

OTHER FAVOURITES

Flight Simulator II (D)	$54.95
F-15 Strike Eagle! (D)	$46.95
Solo Flight (D or T)	$46.95
Kennedy Approach (D)	$46.95
The Print Shop (D)	$58.95
Bank Street Writer (D)	$58.95
Hitchiker's Guide to the Galaxy	$49.95
S.A.M. Software Voice Synthesizer (D)	$69.95
Pinball Construction Set (D)	$49.95
Spy Hunter (Cart)	$55.95
Academy IFR Flight Simulator:	
Commodore 64 (D or T)	$39.95
VIC-20 (Cart)	$49.95
Academy Trivia Plus (D)	$39.95

Add $2.00 per shipment for "Other Favourites" only (any qty.). Man. residents add 6% tax. Include cheque, M.O. (or card no., expiry date & signature for **VISA/MasterCard).** Ask for our **FREE Software Catalogue!**

THE SOFT WAREHOUSE

Dept. 33, Box 1983
Winnipeg, Man.
R3C 3R3

MasterCard VISA

advertisers' index

Academy Software	35
AHOY Magazine	IBC
Batteries Included	BC
Brantford Educational Services	45
Cardinal Software	48
Comal Users Group, USA	43
Computer Networxx	15
Computer Rentals	19
CPU Electronic Systems	35,49
Electronics 2001	IFC,1
GRQ Marketing	49
IRQ Inc.	48
JCS Computer Software	47
King Microware	2
Marca	51
Mastertronic	31
Microcomputer Solutions	25
Micro-W Distributing	25,47
Midnite Software Gazette	35
NCR	21
Progressive Peripherals & Software	52
Programmers Guild Products	9
Serendipity Ventures Inc.	21
Shirinian, George	19
The Soft Warehouse	49
Toronto Computes!	7
TPUG (Computer Fair)	43
TPUG (Conference)	5
TPUG (Comal Reference Guide)	13
TPUG (OS/9)	13,47
TPUG (Disk Subscription)	17
Tralco Educational Software	19
Transactor (The)	7
Ufland Software	49
UNICEF Auction	21
UTILITY/Software	7
Wycor Business Systems	25

TPUG Contacts

TPUG OFFICE 416/782-9252, 416/782-8900

TPUG BBS 416/782-9534

Board of Directors

President	Michael Bonnycastle	416/654-2381
Vice-President	Chris Bennett	416/782-9252
Treasurer	Carol Shevlin	c/o416/782-8900
Recording Sec.	John Shepherd	416/244-1487
	Rosemary Beasley	c/o416/782-8900
	Gord Campbell	416/492-9518
	Gary Croft	416/727-8795
	Mike Donegan	416/639-0329
	Bill Dutfield	416/224-0642
	John Easton	416/251-1511
	Carl Epstein	416/492-0222
	Keith Falkner	416/481-0678
	Gerry Gold	416/225-8760
	Rob Lockwood	416/483-2013
	Louise Redgers	416/447-4811
General Manager	Louise Redgers	416/782-8900
Member Services	Doris Bradley	416/782-8900
Library Co-ord.	David Bradley	c/o416/782-8900
	or the TPUG BBS	416/782-9534
	or Compuserve	ID# 70216,414

TPUG Magazine

Publisher	Louise Redgers	416/782-1861
Editor	Nick Sullivan	416/782-1861
Assistant Editor	Marya Miller	416/782-1861
Ad Director	Louise Redgers	416/782-1861

Meeting Co-ordinators

Brampton Chapter	Garry Ledez	c/o416/782-8900
Central Chapter	Michael Bonnycastle	416/654-2381
C-64 Chapter	Louise Redgers	416/447-4811
COMAL Chapter	Donald Dalley	416/742-3790
	Victor Gough	416/677-8840
Communications	Richard Bradley	c/o416/782-8900
Eastside Chapter	Judith Willans	c/o416/782-8900
	Darren Fuller	c/o416/782-8900
Hardware Chapter		c/o416/782-8900
Machine Language	Garry Ledez	c/o416/782-8900
SuperPET Chapter	Gerry Gold	416/225-8760
VIC 20 Chapter	Rick Adlard	416/486-7835
	Anne Gudz	c/o416/782-8900
Westside Chapter	John Easton	416/251-1511
	Al Farquharson	519/442-7000

Librarians

COMAL	Victor Gough	416/677-8840
Commodore 64	David Bradley	c/o416/782-8900
	Richard Bradley	c/o416/782-8900
French	Baudouin St-Cyr	c/o416/782-8900
PET	Mike Donegan	416/639-0329
SuperPET	Bill Dutfield	416/224-0642
VIC 20	Daryl King	c/o416/782-8900
	Walter Holowatenko	416/782-8900
BBS Sysop (voice)	Richard Bradley	c/o416/782-8900
Assistant Sysop	Sandy Paquette	c/o416/782-8900
Conference	Doris Bradley	416/782-8900

You're invited to the biggest party at Valley Forge since George brought the boys!

M.A.R.C.A.

The biggest Commodore User Fair in the US.

July 26, 27, 28

Valley Forge Convention Center, Valley Forge PA

- Speakers! • Seminars! • Hanging out!
- Fun! • Vendors! • Great Buys!
- Social Events! • Fun!

Areas Tours available.

Meet the names you've only read about. Jim Butterfield. Dick Immers. Len Lindsey. Many, many more! Ask the questions you need answers to. Have 2 1/2 days of non-stop Commodore fun! Bring the whole family. Lots to do. See. And buy. Bargains galore!

Pre-registration by July 1: 2 1/2 days $25 M.A.R.C.A. Members $15 Family Rates available.

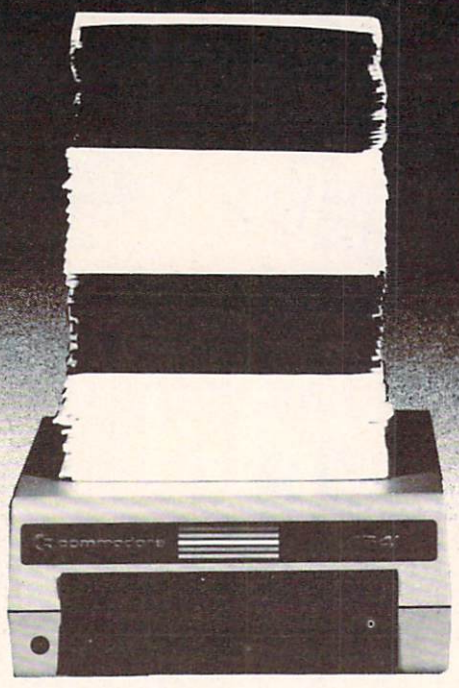
For pre-registration information: M.A.R.C.A., P.O. Box 1902, Martinsburg, West VA 25401.

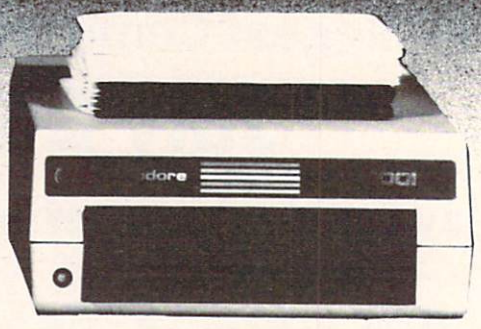
DON'T MISS THE PARTY!

NEW

commodore SFD—1001 ONE MEGABYTE DISK DRIVE

NEW





```
0 "1541              " SD 2A
664 BLOCKS FREE.
```

```
0 "SFD-1001          " DD 2C
4133 BLOCKS FREE.
```

The **SFD-1001** (Super Fast Drive) is now available. With double-sided double-density format, over ONE MEGABYTE can be stored on a single floppy disk. ONE HUNDRED 1541-formatted disks can be reduced to only SIXTEEN **SFD-1001**-formatted disks. By using the intelligent IEEE bus and a bus expansion IEEE interface, the **SFD-1001** loads programs and data over TWICE as fast as the 1541 drive, and ALL THIS inside a case the size of the 1541's!

FULLY COMPATIBLE with any Commodore computer that has an IEEE interface. **FREE** utility disks for both the CBM 8032 and the Commodore 64 are included! Transfer all your files and programs easily from any Commodore disk drive to your **SFD-1001**!

EXPAND your system now with this fast, high-quality, large capacity Commodore disk drive.

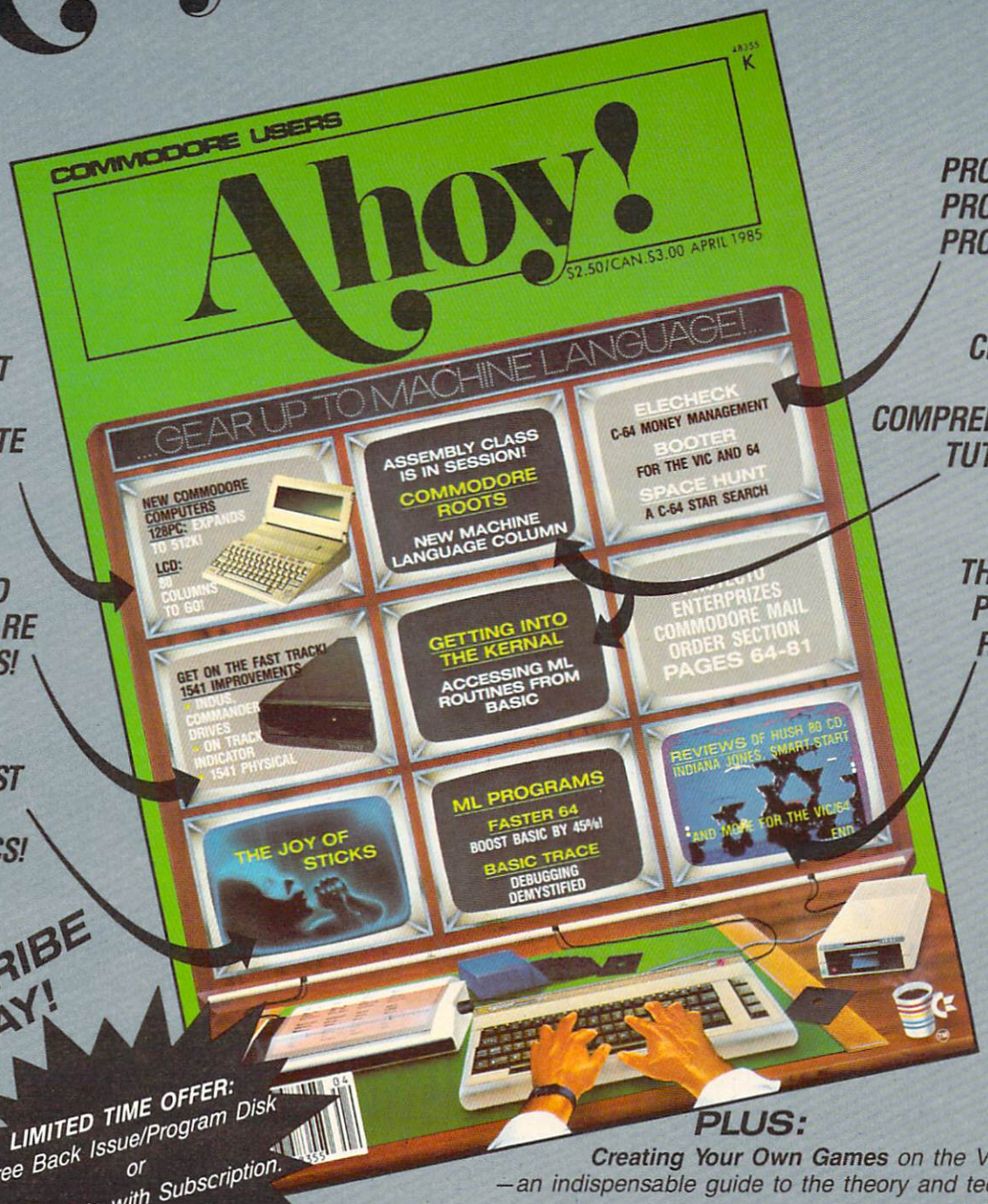
The **SFD-1001** is available NOW from Progressive Peripherals & Software, Inc., your quality Commodore software and hardware source. Suggested retail price is only $399.95.
Dealer inquiries are invited...call for more information or for the name of the dealer nearest you.

LOAD TIMES
The 1541 loads 32K bytes of data in approximately 1 minute, 20 seconds.
The **SFD-1001** loads 32K bytes of data in only about 35 seconds (bus expansion interface) or approximately 1 minute, 4 seconds (serial interface).

PROGRESSIVE PERIPHERALS & SOFTWARE
2186 South Holly Suite 200
Denver, Colorado 80222
(303) 759-5713 Telex:888837 TWX:9109971314

Commodore 64, 1541, 8032, and SFD-1001 are registered trademarks of Commodore Business Machines, Inc.

Ahoy! The *Other* Commodore Magazine



PROGRAMS, PROGRAMS, PROGRAMS!

CLEARER, MORE COMPREHENSIVE TUTORIALS!

THE MOST PRODUCT REVIEWS

MOST CURRENT AND COMPLETE NEWS!

DETAILED HARDWARE ARTICLES!

THE MOST COLOR GRAPHICS!

SUBSCRIBE TODAY!

LIMITED TIME OFFER:
Free Back Issue/Program Disk
or
Cassette with Subscription.

PLUS:

Creating Your Own Games *on the VIC and 64 —an indispensable guide to the theory and technique of game design.*

Commodares*—programming challenges to toggle the bits in your own random access memory.*

Ship to Shore*—the latest on the telecommunications front.*

SOS*—your programming maydays answered.*

	U.S.A.	CANADA & ELSEWHERE
☐ 1 year *Ahoy!* subscription (12 issues).....	$19.95	$26.95
☐ 2 year *Ahoy!* subscription (24 issues).....	$37.95	$49.95

☐ My payment (in U.S. dollars) is enclosed.
☐ Bill me.

Make check or money order payable to **Ion International.**
Send coupon or facsimile to: ***Ahoy!*** **T-PUG 2**
Ion International Inc., 45 West 34th St., Suite 407, New York, NY 10001

NAME_____

ADDRESS_____

CITY_____ STATE_____ ZIP_____

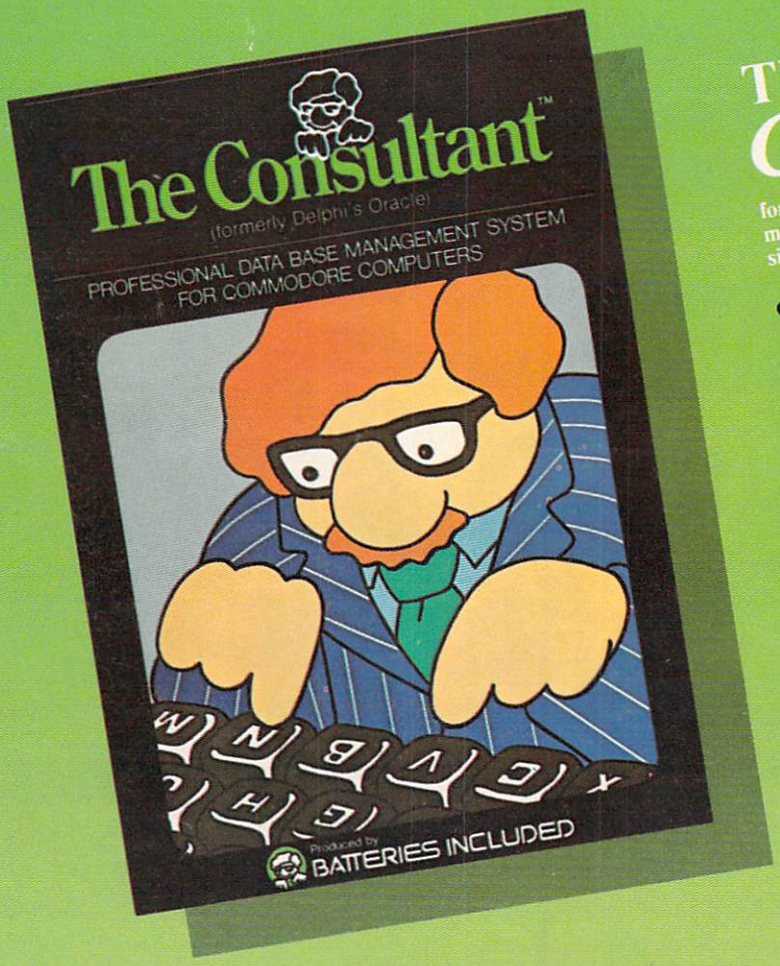
For COMMODORE 64 and IBM PC

"THOROUGHLY IMPRESSED!"

"THE CONSULTANT is capable of very large and complicated searches. It is a very good system at a reasonable price. Documentation: excellent. overall rating: 9/10"
–TPUG MAGAZINE

"…you should definitely try out THE CONSULTANT…powerful and very well designed."
–EVERYTHING YOU CAN DO WITH YOUR COMMODORE, 1984 EDITION

"For a truly professional data management program, you will have to look a long time before you find a better one than THE CONSULTANT."
–HOME APPLICATIONS FOR THE C-64



THE NEW *Consultant*

for your Commodore 64. A database manager of extreme power, speed and simplicity.

- flexible, expandable file structure; up to 9 pages (7000 characters) per record
- total number and size of files limited only by disc space; virtually unlimited file layout possibilities
- sophisticated sorting and sub-sort functions, using up to 9 criteria
- built-in mail list and mail label printing routines
- full arithmetic functions, allowing page sub-totals, report totals and statistical analysis
- interfaces with PaperClip word-processor to produce letters, complex reports and other valuable output

Now Includes:

- 80 column report space
- On screen help files
- Enhanced label functions
- Report systems allowing multiple files
- *TEN* predefined templates ideal for Mail Lists, Inventory, Recipes, Budgets and much more!

AND IT'S
Compatible with *Paperclip* the professional word processor and the *BI-80* column display from *Batteries Included*!

Like a smart, computerized filing cabinet, THE CONSULTANT controls your information for you. You choose the file size and format – THE CONSULTANT's flexible file structure adapts to almost any application you can think of. And you can change the structure of your files without having to re-enter any data – a great time saver. Easy to learn and simple to use. Big system speed and sophisticated sorting functions, all for an exceptionally low price. No wonder THE CONSULTANT comes highly recommended!
AVAILABLE NOW FOR THE COMMODORE 64. *COMING SOON FOR THE IBM PC.*

BATTERIES INCLUDED

"The Energized Software Company!"

30 Mural Street
Richmond Hill, Ontario
L4B 1B5 CANADA
(416) 881-9941
Telex: 06-21-8290

17875 Sky Park North, Suite P
Irving, California
USA 92714
(416) 881-9816
Telex: 509-139

WRITE TO US FOR FULL COLOUR CATALOGUE of our products for COMMODORE, ATARI, APPLE and IBM SYSTEMS

FOR TECHNICAL SUPPORT OR PRODUCT INFORMATION PLEASE PHONE (416) 881-9816

© 1985 BATTERIES INCLUDED. APPLE, ATARI, COMMODORE AND IBM ARE REGISTERED TRADEMARKS RESPECTIVELY OF APPLE COMPUTERS INC., ATARI INC., COMMODORE BUSINESS MACHINES INC., AND IBM BUSINESS MACHINES INC.